



**46°**

*BRAZILIAN CONGRESS OF*  
**PHARMACOLOGY AND**  
*EXPERIMENTAL THERAPEUTICS*

*From Cell Biology to Therapeutics*

**PROGRAM**

**21-24 OCTOBER 2014**

*Fortaleza - CE - Brazil*

*Fábrica de Negócios*

## **PROGRAM**

Fábrica de Negócios

Fortaleza CE

Brazil

October 21-24, 2014

## Enterprise Support

Biolab Sanus Farmacêutica

## Exhibitors

Solução Integrada Comercial Ltda (AVS Projetos)  
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## Support



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<http://www.sbfte.org.br>

## Organization



Eventus Planejamento e Organização  
[eventus@eventus.com.br](mailto:eventus@eventus.com.br)  
<http://www.eventus.com.br>

**Review, Supervision, Layout**  
Sandra Helena Rocha da Cruz

## Message of the president

Dear Colleague,

On behalf of the Brazilian Society of Pharmacology and Experimental Therapeutics I would like to welcome you to our 46th annual meeting. This year, the theme of the meeting is “From cell biology to Therapeutics”. What a big task!!! We do look forward to discussing with our invited speakers, attendees and students.

This meeting is the result of significant work by the organizing committee with the Board of Directors, the Council, Executive Secretariat and Eventus. I very much thank all my colleagues for their efforts and dedication to the success of the event.

We are in debt to CNPq, CAPES, FAPERJ and the Ministry of Health (DECIT) for their financial support to our meeting. Special thanks also go to Biolab-Sanus Farmacêutica that supports the *José Ribeiro do Valle Award*.

Finally, I must thank the Abstract and Poster reviewers who have spent their time and effort to ensure that our standards are met. Do excuse any mistakes that may and will occur during the meeting. In this regard, we very much appreciate your feedback, comments, criticisms and suggestions to the email [sbfte@sbfte.org.br](mailto:sbfte@sbfte.org.br). We are always working to get things better.

I wish you an excellent Congress and a very nice stay in Fortaleza.

Enjoy the meeting and take your time to make new friends and meet old friends.

Mauro M. Teixeira  
President SBFTE

## **Committees**

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## Useful information

### Secretariat

Congress Secretariat will be open from 8h to 18h.

### Posters

Posters Sessions will happen on October 22 and 23 from 18h30-20h30 and October 24 from 09h50-11h50. Please display your poster from 08h00 at the day of your presentation and take it out after your presentation.

### Certificates

The Certificates will be sent to the participants and lecturers in pdf

### Media Desk

*Media desk* will be open from 8h to 18h. Please, leave your material at Media Desk at least two hours before your presentation. All rooms have *data show*. If you need any other equipment, please inform Media Desk as soon as possible. Lecturers presenting at 8h00 in the morning should leave your material at the day before

### Badges

The use of badge is required for all activities and circulation areas

### Abstracts

Abstracts presented at the poster session will be available at SBFTE site: <http://www.sbfte.org.br>



## **Schematic Scientific Program**

21/10/2014 Tuesday

|                    | <b>Platina Room</b>                                                                                                                            |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>09h00-12h00</b> | Meeting of the Deliberative Council<br>(only for Members of the Council and Society Board)                                                     |
| <b>13h30-16h30</b> | SBFTE Permanent Forum of Graduate Programs in Pharmacology<br>(only for Heads of Pharmacology Graduate Programs, Council<br>and Society Board) |
| <b>14h00</b>       | Venue Secretariat and SBFTE Secretariat Opening                                                                                                |
|                    | <b>Ruby Room</b>                                                                                                                               |
| <b>18h00-18h30</b> | Opening ceremony                                                                                                                               |
| <b>18h30-19h30</b> | Opening Conference                                                                                                                             |
| <b>20h00-22h00</b> | Cocktail                                                                                                                                       |

09h00-12h00

*Room Platina*

Meeting of SBFTE Board and Deliberative Council  
(only for Members of the Council and Society Board)

13h30-16h30

*Room Platina*

SBFTE Permanent Forum of Graduate Programs in Pharmacology  
(only for Heads of Pharmacology Graduate Programs, Council and Society Board)

14h00

Venue Secretariat and SBFTE Secretariat Opening

18h00-18h30

*Room Ruby*

Opening ceremony

18h30-19h30

*Room Ruby*

Opening Lecture

**Why intermittent energetic challenges are good for the brain**

Mark P. Mattson (Johns Hopkins University School of Medicine, EUA)

Chairperson: Mauro M. Teixeira (UFMG)

20h00-22h00

Cocktail

## Schematic Scientific Program

### Wednesday (22/10/14)

|                                            | Ruby Room                                                                                                                                     | Topazio Room                                                                          | Ametista Room                                                                                                                                                                                           |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>08h00-08h50</b><br>Courses<br>(Class 1) | Cancer: basic concepts, toxicity of chemotherapy, molecular basis of metastization and strategies of prospection of new anticancer candidates | Essential biostatistical concepts to Pharmacology                                     | Drug-receptor interaction: Dimerization, alosterism and functional selectivity                                                                                                                          |
| <b>09h00-09h50</b><br>Conference           | Knowledge based drug discovery                                                                                                                | Mutualism between gut and microbiota: An essential interaction for health and disease |                                                                                                                                                                                                         |
| <b>09h50-10h20</b>                         | Coffee break                                                                                                                                  |                                                                                       |                                                                                                                                                                                                         |
| <b>10h20-12h00</b><br>Symposia             | Inflammation and infection in the gut                                                                                                         | Medicinal Plants: From traditional knowledge to therapeutics                          | Vascular Pharmacology and Therapeutics                                                                                                                                                                  |
| <b>12h00-13h00</b><br>Coordinated sessions | Molecular Pharmacology                                                                                                                        | Neuropharmacology                                                                     | Natural Products                                                                                                                                                                                        |
| <b>13h00-15h30</b>                         | Lunch                                                                                                                                         |                                                                                       |                                                                                                                                                                                                         |
| <b>13h00-14h30</b>                         |                                                                                                                                               |                                                                                       | SBFTE Permanent Forum of Graduate Programs in Pharmacology Meeting with Society Council Board<br>(only for Pharmacology Graduate Program Representative Members with Society and Council Board Members) |
| <b>14h30-15h20</b>                         |                                                                                                                                               | SBFTE Jovem – Meet the Pharmacologist                                                 |                                                                                                                                                                                                         |
| <b>15h30-16h20</b><br>Conference           | <i>Rocha e Silva Memorial Lecture</i><br>Pharmacology: a new approach to anti-inflammatory therapy                                            |                                                                                       |                                                                                                                                                                                                         |
| <b>16h30-18h30</b><br>Symposia             | New approaches on drug development                                                                                                            | Therapeutical targets for inflammation resolution                                     | Purinergic Signaling in Brain Diseases: From Cell Biology to Therapeutics                                                                                                                               |
| <b>18h30-20h30</b>                         | Poster Session 1 with coffee break                                                                                                            |                                                                                       |                                                                                                                                                                                                         |

## Courses

08h00-08h50

### *Ruby Room*

**Cancer: basic concepts, toxicity of chemotherapy, molecular basis of metastization and strategies of prospection of new anticancer candidates**

Chairperson: Roberto César Pereira Lima Júnior (UFC)

- ❖ Class 1: *Glimpse the main cancer issues and animal models for the study of cancer and toxicity of anticancer agents*  
Roberto César Pereira Lima Júnior (UFC)

### *Topazio Room*

**Essential biostatistical concepts to Pharmacology**

Chairperson: Janaína Menezes Zanoveli (UFPR)

- ❖ Class 1: *Fundamentals of Biostatistics*  
Janaína Menezes Zanoveli (UFPR)

### *Ametista Room*

**Drug-receptor interaction: dimerization, alosterism and functional selectivity**

Chairperson: François G. Noel (UFRJ)

- ❖ Class 1: *Dimerization of receptors: Functional and pathophysiological implications*  
Maria Christina W. de Avellar (Unifesp)

## Conference

09h00-09h50

### *Ruby Room*

**Knowledge based drug discovery**

Rainer Fischer (Fraunhofer Institute, Germany)

Chairperson: Claudia d Ó Pessoa (UFC)

### *Topazio Room*

**Mutualism between gut and microbiota: An essential interaction for health and disease**

Claudio Fiocchi (Cleveland Clinic, USA)

Chairperson: Marcellus Loyola Ponte e Souza (UFC)

**09h50-10h20** Coffee break

*Ruby Room*

**Inflammation and infection in the gut**

Chairperson: Armênio Aguiar dos Santos (UFC)

- ❖ *Anti-inflammatory action of terpenes isolated from plants in experimental colitis in mice*  
João Batista Calixto (UFSC)
- ❖ *Gastrointestinal motility disorders during the intestinal inflammation- importance, mechanisms and pharmacological approaches*  
Marcellus Henrique Loiola Ponte de Souza (UFC)
- ❖ *Function of intestinal mucosa in the enteric infections. Molecular biology, genetic biomarkers and pharmacological approaches*  
Aldo A. M. Lima (UFC)

*Topazio Room*

**Medicinal Plants: From traditional knowledge to therapeutics**

Chairperson: Leticia V. Costa Lotufo (UFC)

- ❖ *Traditional knowledge inspired discovery of natural product-based therapeutics for cancer and neurological disorders*  
Leslie Gunatilaka (University of Arizona)
- ❖ *Peptides from Brazilian Plant species. Studies of its function and prospection as new templates for anticancer and neglected solitodiseases*  
Vanderlan da Silva Bolzani (UNESP)
- ❖ *Biflorin: a molecule with antimetastatic potential*  
Manoel Odorico de Moraes (UFC)

*Ametista Room*

**Vascular Pharmacology and Therapeutics**

Chairperson: Virginia Soares Lemos (UFMG)

- ❖ *Calcium handling in vascular smooth muscle cells*  
Lusiane Maria Bendhack (USP)
- ❖ *The impact of immune system activation on vascular function*  
Rita de C. A. Tostes (USP)
- ❖ *nNOS as a target for the treatment of vascular dysfunction in hypertension and atherosclerosis*  
Virginia Soares Lemos (UFMG)

## Coordinated sessions

12h00-13h00

### Ruby Room

#### Molecular Pharmacology

Chairperson: François G. Noel (UFRJ)

#### Rangel Leal Silva

- ❖ **01.024** *Zymosan promotes NLRP3/ASC/Capsase-1 inflammasome activation by a phagocytosis-independent mechanism.* Silva RL<sup>1</sup>, Lopes AHP<sup>1</sup>, Zamboni DS<sup>2</sup>, Cunha FQ<sup>1</sup>, Cunha TM<sup>1</sup> <sup>1</sup>FMRP-USP – Pharmacology, <sup>2</sup>FMRP-USP – Cell Biology

#### Camila André Pereira

- ❖ **01.029** *Chronic treatment with fluoxetine modulates vascular sympathetic responses by mechanisms that involve inhibition of norepinephrine synthesis/reuptake and increased nitric oxide generation.* Pereira CA<sup>1</sup>, Ruginsk SG<sup>2</sup>, Mestriner FLAC<sup>1</sup>, Antunes-Rodrigues J<sup>2</sup>, Resstel LB<sup>1</sup>, Tostes RC<sup>1</sup> <sup>1</sup>FMRP-USP – Farmacologia, <sup>2</sup>FMRP-USP – Fisiologia

#### Roberta Tesch

- ❖ **01.011** *Analysis of message-address concept of adenosine receptor system by molecular modeling studies.* Tesch R<sup>1</sup>, Sant'Anna CMR<sup>2</sup>, Fraga CAM<sup>1</sup> <sup>1</sup>ICB-UFRJ – Farmacologia e Química Medicinal, <sup>2</sup>ICE-UFRRJ – Química

#### Thais Emanuelle Tavares Pompeu

- ❖ **01.002** *Evaluation of the intrinsic efficacy of N-phenylpiperazines as atypical antipsychotic candidates on D2L receptor.* Pompeu TET<sup>1</sup>, Hermans E<sup>2</sup>, Menegatti R<sup>3</sup>, Fraga CAM<sup>4</sup>, Noël F<sup>1</sup> <sup>1</sup>UFRJ – Farmacologia Bioquímica e Molecular, <sup>2</sup>UCLouvain – Neuroscience, <sup>3</sup>UFG, <sup>4</sup>LASSBio-UFRJ

### Topazio Room

#### Neuropharmacology

Chairperson: Danielle S. Macedo (UFC)

#### Sara Cristina Hott

- ❖ **02.053** *Bed nucleus of the stria terminalis noradrenergic system modulates contextual fear conditioning: involvement of CRF1 receptors and NMDA-NO pathway.* Hott SC, Gomes FV, Uliana DLM, Resstel LBM <sup>1</sup>FMRP-USP – Pharmacology

#### Karine Roversi

- ❖ **02.024** *Influence of trans fat supplementation crossover two generations of rats on an amphetamine-induced mania-animal model.* Roversi Kr<sup>1</sup>, Trevizol F<sup>2</sup>, Dias VT<sup>1</sup>, Roversi K<sup>2</sup>, Burger ME<sup>2</sup> <sup>1</sup>CCS-UFSM – Farmácia, <sup>2</sup>UFSM – Farmacologia

#### Rita de Cássia de O. Lima

- ❖ **02.019** *Administration of 2-araquidonoilglicerol (2AG) in medial pre-frontal cortex induced anxiolytic-like effects in rats.* Lima RCO, Almeida-Santos AF, Aguiar DC <sup>1</sup>ICB-UFGM – Farmacologia

Iris Cristina Maia Oliveira

- ❖ **02.036** *Antipsychotic and antidepressant-like effects of Riparin I in the corticosterone-induced depression model in mice.* Oliveira ICM<sup>1</sup>, Vasconcelos AV, Vidal LMT, Castro LA, Lopes IS, Rodrigues GC, Lima AEL, Sousa PB, Pontes MCD, Sousa FCF UFC – Physiology and Pharmacology

Amestista Room

## Natural Products

Chairperson: Fernanda Regina de Castro Almeida (UFPI)

Renato Ivan Ávila

- ❖ **09.067** *Mucoadhesive formulation containing *Bidens pilosa* L. (Asteraceae) reduces intestinal injury against 5-fluorouracil-induced mucositis in mice.* Ávila RI<sup>1</sup>, Ávila PHM<sup>1</sup>, Santos Filho EX<sup>1</sup>, Bastos CCC<sup>1</sup>, Batista AC<sup>2</sup>, Serpa RC<sup>3</sup>, Marreto RN<sup>1</sup>, Lima EM<sup>1</sup>, Mendonça EF<sup>2</sup>, Valadares MC<sup>1</sup> <sup>1</sup>FARMATEC-UFG – Farmacologia e Toxicologia Celular, <sup>2</sup>FO-UFG – Patologia Bucal

Lorena Neris Barboza

- ❖ **09.019** *Prolonged diuretic activity and sparing-calcium effect of *Tropaeolum majus* L. – evidence in the prevention of osteoporosis.* Barboza LN<sup>1</sup>, Prando TBL<sup>2</sup>, Silva GR<sup>2</sup>, Lourenço ELB<sup>2</sup>, Gasparotto Júnior A<sup>3</sup> <sup>1</sup>UFPR – Farmacologia, <sup>2</sup>Unipar – Farmacologia e Toxicologia de Produtos Naturais, <sup>3</sup>UFGD – Farmacologia

Dalton Dittz

- ❖ **09.106** *Cellular mechanisms in antimetastatic action of protease from *V. cundinamarcensis* latex on murine melanoma cells.* Dittz D<sup>1</sup>, Tatsumi G<sup>1</sup>, Salas CE<sup>2</sup>, Lopes MTP<sup>1</sup> – <sup>1</sup>UFMG – Farmacologia, <sup>2</sup>UFMG – Bioquímica

Nathalia Ribeiro Pinho de Sousa

- ❖ **09.120** *Silymarin protects against irinotecan-induced non-alcoholic steatohepatitis through the inhibition of protein nitrosylation and toll-like receptor 4 immunoexpression.* Assis-Júnior EM<sup>1</sup>, Sousa NRP<sup>1</sup>, Moreira LS<sup>1</sup>, Malveira LRC<sup>1</sup>, Wong DVT<sup>1</sup>, Melo AT<sup>1</sup>, Pereira VBM<sup>1</sup>, Wanderley CWS<sup>1</sup>, Soares BM<sup>1</sup>, Almeida PRC<sup>2</sup>, Ribeiro RA<sup>1</sup>, Lima-Júnior RCP<sup>1</sup> <sup>1</sup>UFC – Physiology and Pharmacology, <sup>2</sup>UFC – Pathology and Forensic Medicine

13h00-15h30 Lunch

SBFTE Permanent Forum of Graduate Programs in Pharmacology Meeting with Society Council Board (only for Pharmacology Graduate Program Representative Members with Society and Council Board Members)

13h00-14h30

Ametista Room

## SBFTE Jovem

14h30-15h20

*Topazio Room*

### Meet the pharmacologist

Chairperson: Erick J. R. Silva (Unesp-Botucatu)

- ❖ David Newman (NCI-NIH)
- ❖ François Noel (UFRJ)
- ❖ João B. Calixto (UFSC)
- ❖ Leslie Gunatilaka (University of Arizona)
- ❖ Manassés C. Fonteles (UFC/UECE)
- ❖ Maria Christina W. Avellar (Unifesp-EPM)
- ❖ Regina P. Markus (USP)

## Conference

15h30-16h20

*Ruby Room*

*Rocha e Silva Memorial Lecture*

### Resolution pharmacology: A new approach to anti-inflammatory therapy

Mauro Perretti (The William Harvey Research Institute, UK)

Chairperson: Mauro M. Teixeira (UFMG)

## Symposia

16h30-18h30

*Ruby Room*

### New approaches on drug development

Chairperson: Norberto Peporine Lopes (USP)

- ❖ *Mass spectrometry on drug development: from the structural elucidation to imaging generation*  
Norberto Peporine Lopes (USP)
- ❖ *Discovery, design and mechanism of next generation proteasome inhibitors for cancer chemotherapy*  
Daniela Barretto Barbosa Trivella (LNBio)
- ❖ *Target validation, hit identification and hit to lead optimization of adenosine kinase inhibitors.*  
Lucio Holanda G. de Freitas Junior (LNBio)

*Topazio Room*

### Therapeutical targets for inflammation resolution

Chairperson: Patrícia Machado Rodrigues e Silva (Fiocruz)

- ❖ *High dietary fat intake compromises blood brain barrier structural and immunological integrity – a link to cerebrovascular disease?*  
Egle Solito (The William Harvey Research Institute, UK)
- ❖ *Role of annexin A1 on PPAR expression*  
Sandra Helena Poliselli Farsky (USP)



- ❖ *Crosstalk between glucocorticoid-induced proteins GILZ and Annexin A1 in the context of resolution of acute inflammation.*  
Lirlândia Pires de Sousa (UFMG)
- ❖ *Regulatory effect of Annexin-1 on allergic lung inflammation induced by house dust mite (HDM) in mice.*  
Patrícia Machado Rodrigues e Silva (Fiocruz)

*Amestista Room*

### **Purinergic signaling in brain diseases: From cell biology to therapeutics**

**Chairperson:** Rui Daniel Schroder Prediger (UFSC)

- ❖ *Control by caffeine of mood and memory processes – role of adenosine A<sub>2A</sub> receptors*  
Rodrigo A. Cunha (University of Coimbra, Portugal)
- ❖ *A coffee break for age-related cognitive deficits*  
Lisiane O. Porciúncula (UFRGS)
- ❖ *Adenosine A<sub>2A</sub> receptors as target to manage non-motor symptoms of Parkinson's disease*  
Rui Daniel Schroder Prediger (UFSC)
- ❖ *ATP P2Y<sub>1</sub> receptors control cognitive deficits and neurotoxicity induced by brain ischemia*  
Geanne Matos de Andrade (UFC)

### **Poster Session 1 – with coffee break**

18h30-20h30

01. Cellular and Molecular Pharmacology (01.001-01.016)
02. Neuropharmacology (02.001-02.020)
04. Inflammation (04.001-04.041 and 04.057)
05. Pain and Nociception (05.001-05.018)
06. Cardiovascular and Renal (06.001-06.021)
08. Respiratory, Urinary and Reproductive Pharmacology (08.001-08.010)
09. Natural Products and Toxinology (09.001-09.052)
10. Cancer and Cell Proliferation (10.001-10.015)



# Schematic Scientific Program

## Thursday (23/10/14)

|                                            | Ruby Room                                                                                                                                     | Topazio Room                                                                           | Ametista Room                                                                  |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>08h00-08h50</b><br>Courses<br>(Class 2) | Cancer: basic concepts, toxicity of chemotherapy, molecular basis of metastization and strategies of prospection of new anticancer candidates | Essential Biostatistical Concepts to Pharmacology                                      | Drug-receptor interaction: Dimerization, alosterism and functional selectivity |
| <b>09h00-09h50</b><br>Conferences          | Therapeutic potential of toxins: from bench discovery to “drugable” compound                                                                  | Neuroinflammation and chronic pain                                                     |                                                                                |
| <b>09h50-10h20</b>                         | Coffee break                                                                                                                                  |                                                                                        |                                                                                |
| <b>10h20-12h00</b><br>Symposia             | Mechanisms of toxicity and resistance in cancer chemotherapy                                                                                  | Pain mechanisms and development of analgesic strategies                                | Membrane bound and soluble guanylate cyclases as therapeutical targets         |
| <b>12h00-13h00</b><br>Coordinated sessions | Molecular Cancer                                                                                                                              | Inflammation                                                                           | Pain                                                                           |
| <b>13h00-15h30</b>                         | Lunch                                                                                                                                         |                                                                                        |                                                                                |
| <b>14h00-15h20</b>                         | SBFTE General Assembly                                                                                                                        |                                                                                        |                                                                                |
| <b>15h30-16h20</b><br>Conference           | Sertoli cell proliferation and function in vertebrate: a view on cellular and signaling mechanisms                                            | Structure- and ligand-based drug design approaches to drug discovery                   |                                                                                |
| <b>16h30-18h30</b><br>Symposia             | GPCRs: Structure, Signaling and Drug Discovery                                                                                                | Purinergic signaling as an emerging potential target to control inflammatory responses | José Ribeiro do Valle Award                                                    |
| <b>18h30-20h30</b>                         | Poster Session 2 with coffee break                                                                                                            |                                                                                        |                                                                                |

## Courses

08h00-08h50

*Ruby Room*

**Cancer: basic concepts, toxicity of chemotherapy, molecular basis of metastization and strategies of prospection of new anticancer candidates**

Chairperson: Roberto César Pereira Lima Júnior (UFC)

- ❖ Class 2: *Syndecan-1 and Manganese: Possible partners in cancer cell migration and metastasis via Integrin activation*

Mauro Sérgio Gonçalves Pavão (UFRJ)

*Topazio Room*

**Essential Biostatistical concepts to Pharmacology**

Chairperson: Janaína Menezes Zanoveli (UFPR)

- ❖ Class 2: *Data analysis: Parametric tests*

Leandro José Bertoglio (UFSC)

*Ametista Room*

**Drug-receptor interaction: Dimerization, alosterism and functional selectivity**

Chairperson: François G. Noel (UFRJ)

- ❖ Class 2: *Allosteric modulators: Concept, identification and implication for new drugs discovery*

François G. Noel (UFRJ)

## Conference

09h00-09h50

*Ruby Room*

**Therapeutic potential of toxins: from bench discovery to “drugable” compound**

Jan Tytgat (University of Leuven, Belgium)

Chairperson: Yara Cury (Butantan Institute)

*Topazio Room*

**Neuroinflammation and chronic pain**

Ru-Rong Ji (Duke University, USA)

Chairperson: Waldiceu A. Verri

09h50-10h20 Coffee break

## Symposia

10h20-12h00

### *Ruby Room*

#### **Mechanisms of toxicity and resistance in cancer chemotherapy**

Chairperson: Ronaldo de A. Ribeiro (UFC)

- ❖ *Gastrointestinal toxicities during irinotecan cancer chemotherapy. Mechanisms and mediators*  
Ronaldo de Albuquerque Ribeiro (UFC)
- ❖ *Studying cancer resistance in cell culture*  
Guido Lenz (UFRGS)
- ❖ *The oncogenic factor TBX2 confers cisplatin resistance in cancer cells through a novel role in the DNA repair pathway*  
Sharon Prince (University of Cape Town, South Africa)

### *Topazio Room*

#### **Pain mechanisms and development of analgesic strategies**

Chairperson: Waldiceu A. Verri Jr (UEL)

- ❖ *Capturing the affective dimensions of chronic pain in preclinical models*  
Tamara King (University of New England, USA)
- ❖ *Neuroimmune activation in the spinal cord enhances kynurenine pathway and accounts for the genesis of neuropathic pain*  
Guilherme Rabelo de Souza (USP)
- ❖ *Exploring new targets and mechanisms of orofacial neuropathic pain*  
Juliana Geremias Chichorro (UFPR)

### *Ametista Room*

#### **Membrane bound and soluble guanylate cyclases as therapeutic targets**

Chairperson: Nilberto Robson Falcão do Nascimento (UECE)

- ❖ *G protein- and cytokine-mediated pathways to natriuretic peptide stimulated secretion*  
Adolfo de Bold (University of Ottawa)
- ❖ *Molecular mechanisms underlying the renal effects of uroguanylin*  
Manassés C. Fonteles (UECE / UFC)
- ❖ *Role of guanylate cyclase agonists in the regulation of gastrointestinal function and treatment of gastrointestinal diseases*  
Mark G. Currie (Ironwood Pharmaceuticals, USA)
- ❖ *Membrane bound and soluble guanylate cyclases as therapeutic targets*  
Gilberto de Nucci (Unicamp)

## Coordinated sessions

12h00-13h00

*Ruby Room*

### **Molecular Cancer**

Chairperson: Letícia V. Costa Lotufo (UFC)

*Luciana Pimenta*

- ❖ **09.045** *Crotoxin, a toxin from rattlesnake venom, inhibits the angiogenic function of macrophages in co-culture model.* Pimenta LA, Pereira JF, Kato EE, Cirillo MC, Sampaio SC IBu – Pathophysiology

*Michele Oliveira Hütten*

- ❖ **10.001** *XIAP silencing and p53 superexpression cooperate in glioma cell death.* Hütten MO, Silva AO, Lenz G UFRGS

*Luciana Silva do Amaral*

- ❖ **10.011** *Role of GSK3- $\beta$  signaling on telocinobufagin-induced cell death.* Amaral LS, Cunha-Filho GA, Noël F, Quintas LEM ICB-UFRJ

*André Avelino dos Santos Junior*

- ❖ **10.016** *Role of Purinergic P2 receptors on proliferation and viability of esophageal cancer cells lines.* Santos Jr AA1, Paccez JD2, Pinto LF3, Zerbini LF2, Morrone FB1 – 1PUCRS – Biologia Celular e Molecular, 2ICGEB – Cancer Genomics, 3INCa

*Topazio Room*

### **Inflammation**

Chairperson: Marcelo N. Muscará (USP)

*Davidson Furtado Dias*

- ❖ **04.007** *Arginase contributes to lung fibrotic response in silicotic mice.* Dias DF, Ciambarella BT, Carvalho VF, Martins MA, Silva PMR IOC-Fiocruz

*Kamila Maria Oliveira Sales*

- ❖ **04.054** *Dyspeptic symptoms, gastric emptying, ghrelin and leptin serum levels in inflammatory bowel diseases patients.* Sales KMO<sup>1</sup>, Cavalcanti RF<sup>1</sup>, Santos AA<sup>1</sup>, Braga LLBCB<sup>1</sup>, Oliveira RB<sup>3</sup>, Castro M<sup>2</sup>, Souza MHL<sup>1</sup> <sup>1</sup>UFC – Physiology and Pharmacology, <sup>2</sup>FMRP-USP

*Elizabeth Soares Fernandes*

- ❖ **04.057** *TRPV1 antagonism by capsaizepine modulates innate immune response in mice infected with Plasmodium berghei Anka.* Fernandes ES<sup>1,2</sup>, Brito CXL<sup>1</sup>, Teixeira SA<sup>3</sup>, Barboza R<sup>4</sup>, dos Reis AS<sup>3</sup>, Azevedo-Santos APS<sup>5</sup>, Muscará M<sup>3</sup>, Costa SKP<sup>3</sup>, Marinho CRF<sup>3</sup>, Brain SD<sup>2</sup>, Grisotto MAG<sup>1,6</sup> – <sup>1</sup>Ceuma, <sup>2</sup>King's College – Cardiovascular Division, <sup>3</sup>USP, <sup>4</sup>Unifesp, <sup>5</sup>UFMA, <sup>6</sup>Instituto Florence

*Andressa de Freitas*

- ❖ **04.070** *Role of the aryl hydrocarbon receptor in the pathogenesis of sepsis.* Freitas A, Donate PB, Castanheira FVS, Borges VF, Nascimento DC, Talbot J, Alves-Filho JCF, Cunha FQ FMRP-USP – Pharmacology

*Ametista Room*

## **Pain**

Chairperson: Mariana Lima Vale (UFC)

*Flavia Viana Santa-Cecilia*

- ❖ **05.025** *NOD1 and NOD2 contribute to the genesis of neuropathic pain and are involved in glial cells activation.* Santa-Cecilia FV, Ferreira DW, Fonseca MD, Cunha FQ, Zamboni DS, Cunha TM FMRP-USP – Pharmacology

*Beatriz Stein Neto*

- ❖ **05.037** *Aldehyde dehydrogenase 2 activation reduces neuropathic pain and 4-hydroxynonenal adducts in spinal cord.* Netto BS1, Ferreira JC2, Chen CH3, Mochly-Rosen D3, Cury Y1, Zambelli VO1 1IBu – Dor e Sinalização, 2ICB-USP – Anatomia, 3Stanford University – Chemistry and Systems Biology

*Gabriela Trevisan*

- ❖ **05.019** *Transient receptor potential ankyrin 1 blockage reduced hyperalgesia in a model of trigeminal neuralgia.* Trevisan G<sup>1</sup>, Nassini R<sup>2</sup>, Di Siena G<sup>2</sup>, Materazzi S<sup>2</sup>, Fusi C<sup>2</sup>, Rossato MF<sup>3</sup>, Ferreira J<sup>4</sup>, Geppetti P<sup>2</sup> <sup>1</sup>UNESC – Ciências da Saúde, <sup>2</sup>Unifi – Ciências da Saúde, <sup>3</sup>UFMS – Química, <sup>4</sup>UFSC – Farmacologia

*Leandro Francisco Silva Bastos*

- ❖ **05.014** *Essential role played by tumor necrosis factor alpha in urate crystal-induced inflammation and hypernociception in mice.* Bastos LFS<sup>1</sup>, Oliveira THC<sup>1</sup>, Amaral FA<sup>1</sup>, Dias ACF<sup>2</sup>, Oliveira VLS<sup>1</sup>, Tavares LD<sup>2</sup>, Costa VV<sup>1</sup>, Galvão I<sup>1</sup>, Soriani FM<sup>3</sup>, Sachs D<sup>4</sup>, Ryffel B<sup>5</sup>, Souza DG<sup>2</sup>, Teixeira MM<sup>1</sup> <sup>1</sup>UFMG – Biochemistry and Immunology, <sup>2</sup>UFMG – Microbiology, <sup>3</sup>UFMG – General Biology, <sup>4</sup>UNIFEI – Pharmacology, <sup>5</sup>CNRS – Molecular Immunology and Embryology

**13h00-15h30** Lunch

## **SBFTE General Assembly**

*Ruby Room*

14h00-15h20

## **Conference**

15h30-16h20

*Ruby Room*

## **Sertoli cell proliferation and function in vertebrate: a view on cellular and signaling mechanisms**

Luiz Renato de França (INPA)

Chairperson: Maria Christina W. de Avellar (Unifesp)

*Topazio Room*

## **Structure- and ligand-based drug design approaches to drug discovery**

Adriano D. Andricopulo (USP)

Chairperson: Mauro M. Teixeira (UFMG)

## Symposia

16h30-18h30

### *Ruby Room*

#### **GPCRs: Structure, Signaling and Drug Discovery**

Chairperson: Claudio M. da Costa Neto (USP)

- ❖ *Structural basis of GPCR activation*  
Xavier Deupi (Paul Scherrer Institut, Switzerland)
- ❖ *Biased agonism in alpha-1 adrenergic receptor subtypes.*  
Andre Sampaio Pupo (UNESP-Botucatu)
- ❖ *New findings in angiotensin receptors signaling. Relevance to drug discovery.*  
Claudio M. da Costa-Neto (USP)
- ❖ *Functional selectivity and assembly of GPCRs signaling complexes. New paths toward drug discovery.*  
Michel Bouvier (Université de Montréal, Canada)

### *Topazio Room*

#### **Purinergic signaling as an emerging potential target to control inflammatory responses**

Chairperson: Robson Coutinho-Silva (UFRJ)

- ❖ *P2X7 receptor a valuable target in Nervous System from development to neurodegeneration*  
María Teresa Miras-Portugal (University Complutense of Madrid, Spain)
- ❖ *Purinergic system in the M1 and M2 activation.*  
Rafael Fernandes Zanin
- ❖ *Implications of P2X7 receptors in renal diseases*  
Maurilo de Nazaré de Lima Leite Júnior (UFRJ)
- ❖ *Purinergic signaling in vascular dysfunction*  
Claudia Lucia Martins Silva (UFRJ)

### *Ametista Room*

#### **José Ribeiro do Valle Award**

Chairperson: Mauro M. Teixeira (UFMG)

### *Zelia Menezes*

- ❖ **04.001 Microbiota is important to 5-fluorouracil-induced intestinal mucositis in mice.**  
Menezes-Garcia Z<sup>1</sup>, Arifa RDN<sup>1</sup>, Acúrcio LB<sup>1</sup>, Lima RL<sup>1</sup>, Brito CB<sup>1</sup>, Teixeira MM<sup>2</sup>, Souza DG<sup>1</sup> <sup>1</sup>UFMG – Microbiologia, <sup>2</sup>UFMG – Imunologia e Bioquímica

### *Jessica Barbosa do Nascimento Viana*

- ❖ **01.003 LDT3 and LDT5: Pharmacological evaluation in human alpha-1 adrenoceptors.** Nascimento-Viana JB<sup>1</sup>, Alcántara-Hernández R<sup>2</sup>, García-Sáinz JA<sup>2</sup>, Romeiro LAS<sup>3</sup>, Noël F<sup>1</sup>, Silva CLM<sup>1</sup> <sup>1</sup>UFRJ – Farmacologia Bioquímica e Molecular, <sup>2</sup>UNAM – Fisiología Celular, <sup>3</sup>UnB – Desenvolvimento de Estratégias Terapêuticas



*Priscila de Souza*

- ❖ **06.043** Impaired vascular function in sepsis-surviving rats: evidence for endothelial dysfunction mediated by angiotensin II, increased ROS/RNS Generation and augmented activity of RHO-kinase. de Souza P<sup>1</sup>, Scheschowitsch K<sup>2</sup>, da Silva LM<sup>1</sup>, Guarido KL<sup>2</sup>, Werner MF<sup>1</sup>, Assreuy J<sup>2</sup>, da Silva-Santos JE<sup>2</sup> <sup>1</sup>UFPR – Pharmacology, <sup>2</sup>UFSC – Pharmacology

*Jhimmy Talbot*

- ❖ **04.108** Smoking-induced rheumatoid arthritis aggravation is dependent of aryl hydrocarbon receptor activation and is influenced by genetic polymorphism. Talbot J<sup>1</sup>, Liew FY<sup>2</sup>, Peres RS<sup>1</sup>, Pinto LG<sup>1</sup>, Oliveira RDR<sup>1</sup>, Silva JR<sup>1</sup>, Lima KWA<sup>1</sup>, França RFO<sup>1</sup>, Ryffel B<sup>3</sup>, Cunha TM<sup>1</sup>, Alves-Filho JCF<sup>1</sup>, Louzada-Júnior P<sup>1</sup>, Cunha FQ<sup>1</sup> <sup>1</sup>FMRP-USP – Pharmacology, <sup>2</sup>University of Glasgow, <sup>3</sup>CNRS

*Kátia Maciel Lima*

- ❖ **04.022** cAMP elevating agents induce resolution of acute inflammation dependent on annexin A1. Lima KM<sup>1</sup>, Caux TR<sup>2</sup>, Vago JP<sup>1</sup>, Tavares LP<sup>3</sup>, Aribada RG<sup>2</sup>, Carmo AAF<sup>1</sup>, Galvão I<sup>3</sup>, Costa BRC<sup>2</sup>, Soriani FM<sup>4</sup>, Perretti M<sup>5</sup>, Silva PMR<sup>6</sup>, Pinho V<sup>1</sup>, Teixeira MM<sup>3</sup>, Sousa LP<sup>2</sup> <sup>1</sup>UFMG – Morfologia, <sup>2</sup>UFMG – Análises Clínicas e Toxicológicas, <sup>3</sup>UFMG – Bioquímica e Imunologia, <sup>4</sup>UFMG – Biologia Geral, <sup>5</sup>QMUL, <sup>6</sup>Fiocruz – Fisiologia e Farmacodinâmica

#### Poster Session 2 with coffee break

18h30-20h30

01. Cellular and Molecular Pharmacology (01.010 e 01.017-01.031)
02. Neuropharmacology (02.021-02.040)
04. Inflammation (04.042-04.082)
05. Pain and Nociception (05.019-05.036)
06. Cardiovascular and Renal (06.022-06.042)
07. Endocrine and Gastrointestinal (07.001-07.019)
09. Natural Products and Toxinology (09.053-09.104)
11. Clinical Pharmacology, Pharmacokinetics, Pharmacogenomics and Preclinical Toxicology (11.001-11.015)



# Schematic Scientific Program

## Friday (24/10/14)

|                                            | Ruby Room                                                                                                                                     | Topazio Room                                      | Ametista Room                                                                  |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------------------|
| <b>08h00-08h50</b><br>Courses<br>(Class 3) | Cancer: basic concepts, toxicity of chemotherapy, molecular basis of metastization and strategies of prospection of new anticancer candidates | Essential Biostatistical Concepts to Pharmacology | Drug-receptor interaction: Dimerization, alosterism and functional selectivity |
| <b>09h00-09h50</b>                         | <i>Drugs and Drug Leads from Nature</i>                                                                                                       |                                                   |                                                                                |
| <b>09h50-11h50</b>                         | Poster Session 3 with Coffee-Break                                                                                                            |                                                   |                                                                                |
| <b>12h00-13h00</b><br>Conference           | From Chemistry to Pharmacology and back to Chemistry: the history of a therapeutic cannabinoid                                                |                                                   |                                                                                |
| <b>13h00-13h30</b>                         | Closing ceremony and Awards                                                                                                                   |                                                   |                                                                                |

## Courses

08h00-08h50

*Ruby Room*

**Cancer: basic concepts, toxicity of chemotherapy, molecular basis of metastization and strategies of prospection of new anticancer candidates**

Chairpersons: Roberto César Pereira Lima Júnior (UFC)

❖ Class 3: *Prospection of new anticancer candidates: Traditional approaches and trends*

Diego Veras Wilke (UFC)

*Topazio Room*

**Essential Biostatistical Concepts to Pharmacology**

Chairperson: Janaína Menezes Zanoveli (UFPR)

❖ Class 3: *Data analysis – nonparametric tests*

Carlos Fernando de Mello (UFSM)

*Ametista Room*

**Drug-receptor interaction: Dimerization, alosterism and functional selectivity**

Chairperson: François G. Noel (UFRJ)

❖ Class 3: *Functional Selectivity: Concept, quantification, and opportunities for discovery of new drugs*

André Sampaio Pupo (UNESP)

## Conference

09h00-09h50

*Ruby Room*

**Drugs and Drug Leads from Nature**

David Newman (National Cancer Institute, USA)

Chairperson: Letícia V. Costa Lotufo (UFC)

## Poster Session 3 with Coffee-Break

09h50-11h50

02. Neuropharmacology (02.041-02.059)

03. Psychopharmacology (03.001-03.022)

04. Inflammation (04.083-04.123)

05. Pain and Nociception (05.037-05.053)

06. Cardiovascular and Renal (06.043-06.062)

07. Endocrine and Gastrointestinal (07.004)

09. Natural Products and Toxinology (09.105-09.155)

10. Cancer and Cell Proliferation (10.016-10.029)

11. Clinical Pharmacology, Pharmacokinetics, Pharmacogenomics and Preclinical Toxicology (11.016-11.029)

#### Closing Conference

12h00-13h00

*Ruby Room*

#### **From Chemistry to Pharmacology and back to Chemistry: the history of a therapeutic cannabinoid**

Francisco S. Guimarães (USP)

Chairperson: Fernando de Q. Cunha (USP)

#### Closing ceremony and Awards

13h00-13h30



**01. Cellular and Molecular Pharmacology**

**01.001 Biological evaluation and toxicological profile of the new antibacterial prototypes against bovine mastitis.** Silva AR<sup>1</sup>, Nunes ELC<sup>2</sup>, Silva GCCS<sup>1</sup>, Cardoso EA<sup>1</sup>, Santana SS<sup>3</sup>, Gomez JAG<sup>3</sup>, Vargas MD<sup>3</sup>, Castro HC<sup>2</sup>, Lione VOF<sup>1</sup>  
<sup>1</sup>UFRJ-LaBioFar – Fármacos e Medicamentos, <sup>2</sup>LABiEMol-UFF, <sup>3</sup>IQ-UFF – Química Inorgânica

**01.002 Evaluation of the intrinsic efficacy of N-phenylpiperazines as atypical antipsychotic candidates on D2L receptor.** Pompeu TET<sup>1</sup>, Hermans E<sup>2</sup>, Menegatti R<sup>3</sup>, Fraga CAM<sup>4</sup>, Noël F<sup>1</sup>  
<sup>1</sup>UFRJ – Farmacologia Bioquímica e Molecular, <sup>2</sup>UCLouvain – Neuroscience, <sup>3</sup>UFG, <sup>4</sup>LASSBio-UFRJ

**01.003 LDT3 and LDT5: Pharmacological evaluation in human alpha-1 adrenoceptors.** Nascimento-Viana JB<sup>1</sup>, Alcántara-Hernández R<sup>2</sup>, García-Sáinz JA<sup>2</sup>, Romeiro LAS<sup>3</sup>, Noël F<sup>1</sup>, Silva CLM<sup>1</sup>  
<sup>1</sup>UFRJ – Farmacologia Bioquímica e Molecular, <sup>2</sup>UNAM – Fisiologia Celular, <sup>3</sup>UnB – Desenvolvimento de Estratégias Terapêuticas

**01.004 Pharmacological evaluation of new N-phenylpiperazine derivatives for the treatment of benign prostatic hyperplasia: intrinsic activity determination for 5-HT1A and muscarinic receptors.** Carvalho AR<sup>1</sup>, Nascimento-Viana JB<sup>1</sup>, Romeiro LAS<sup>2</sup>, Noël F<sup>1</sup>, Silva CLM<sup>1</sup>  
<sup>1</sup>UFRJ – Farmacologia Bioquímica e Molecular, <sup>2</sup>LADETER-UnB – Desenvolvimento de Estratégias Terapêuticas

**01.005 Immunotherapy against pythiosis: Molecular profile, genetic diversity and evolution of Brazilian isolates of *Pythium insidiosum* based on COX II gene.** Ribeiro

TC<sup>1</sup>, Weiblen C<sup>1</sup>, Azevedo MI<sup>2</sup>, Monteiro DU<sup>1</sup>, Emmanouilidis J<sup>1</sup>, Machado VS<sup>1</sup>, Pereira DIB<sup>3</sup>, Botton SA<sup>1</sup>, Santurio JM<sup>1</sup>  
<sup>1</sup>UFMS, <sup>2</sup>UFRGS, <sup>3</sup>UFPEl

**01.006 Pharmacological and molecular evidence on the relevance of kinin receptors in a mouse glioma model.** Nicoletti NF<sup>1</sup>, Senécal J<sup>2</sup>, Pesquero JB<sup>3</sup>, Campos MM<sup>1</sup>, Couture R<sup>3</sup>, Morrone FB<sup>1</sup>  
<sup>1</sup>INTOX-PUCRS – Biologia Celular e Molecular, <sup>2</sup>INTOX-PUCRS, <sup>3</sup>UdeM, <sup>3</sup>Unifesp – Biofísica

**01.007 Melatonin inhibits P2Y1 receptor-mediated leukocyte adhesion to endothelial cell.** Cardoso TC, Silva CLM  
 ICB-UFRJ

**01.008 Protective effect of 4,4'-bischlorodiphenyl diselenide against inhibition of thioredoxin reductase by methylmercury.** Leite GO<sup>1</sup>, Lugokenski TH<sup>2</sup>, Rocha JBT<sup>3</sup>, Wagner C<sup>2,1</sup>  
<sup>1</sup>UFMS – Farmacologia, <sup>2</sup>Unipampa, <sup>3</sup>UFMS – Bioquímica Toxicológica

**01.009 Novel digoxin derivatives not mimic the cellular effects of digoxin.** Silva NP<sup>1</sup>, Noël F<sup>1</sup>, Barbosa LAO<sup>2</sup>, Quintas LEM<sup>1</sup>  
<sup>1</sup>ICB-UFRJ, <sup>2</sup>CCS-UFSJ

**01.011 Analysis of message-address concept of adenosine receptor system by molecular modeling studies.** Tesch R<sup>1</sup>, Sant'Anna CMR<sup>2</sup>, Fraga CAM<sup>1</sup>  
<sup>1</sup>ICB-UFRJ – Farmacologia e Química Medicinal, <sup>2</sup>ICE-UFRRJ – Química

**01.012 Red propolis from State of Alagoas induced anti-hypertensive effect in SHR.** Herculano EA<sup>1</sup>, Costa CDF<sup>2</sup>, Silva JCG<sup>2</sup>, Beiriz RV<sup>2</sup>, Tenório EP<sup>2</sup>, Moura MT<sup>2</sup>, Nascimento TG<sup>2</sup>, Ribeiro EAN<sup>2</sup>, Araújo-Júnior JX<sup>1</sup>  
<sup>1</sup>UFAL – Chemistry Biotechnology, <sup>2</sup>UFAL – Pharmacy and Nursing

**01.013** Pharmacological evaluation of marinobufagin derivatives: Search for functional selectivity among cardiotonic steroids. Rendeiro MM, Noël F, Cunha-Filho GSA, Touza NA, Quintas LEM ICB-UFRJ

**01.014** Expression and purification of an acidic phospholipase A2 from *Bothrops pauloensis* snake venom. Borges IP, Isabel TF, Gimenes SNC, Homs-Brandeburgo MI, Rodrigues RS, Silva FH, Rodrigues VM UFU

**01.015** Purified polysaccharides of *Genipa americana* leaves: Anticoagulant, antiplatelet and antithrombotic activities. Madeira JC<sup>1</sup>, Nogueira FC<sup>2</sup>, Souza ROS<sup>1</sup>, Pereira LP<sup>1</sup>, Assreuy AMS<sup>1</sup>, Pereira MG<sup>2</sup> <sup>1</sup>ISCB-UECE, <sup>2</sup>FECELESC-UECE

**01.016** Cardiovascular effects of LQM 001 a derivative aminoguanidinic. Costa CDF<sup>1</sup>, Herculano EA<sup>1</sup>, Lima RR<sup>1</sup>, Bernadino AC<sup>1</sup>, Beiriz RV<sup>1</sup>, Silva JCG<sup>1</sup>, Araújo-Júnior JX<sup>2</sup>, Ribeiro EAN<sup>1</sup> <sup>1</sup>UFAL – Pharmacy and Nursing, <sup>2</sup>UFAL – Chemistry Biotechnology

## 02. Neuropharmacology

**02.001** TRPA1 receptor: a novel approach in Alzheimer's disease. Bicca MA<sup>1</sup>, Santos ECS<sup>1</sup>, Loch-Neckel G<sup>1</sup>, Leal PC<sup>2</sup>, Calixto JB<sup>1</sup> <sup>1</sup>UFSC – Farmacologia, <sup>2</sup>UFSC – Química

**02.002** Effect of aflatoxin B1 on EEG recordings and Na<sup>+</sup>, K<sup>+</sup>-ATPase activity after pentylenetetrazol administration in rats. Braga ACM<sup>1</sup>, Trombetta F<sup>1</sup>, Poersch AB<sup>1</sup>, Schiefelbein N<sup>2</sup>, Lima C<sup>1</sup>, Ribeiro LR<sup>1</sup>, Furian AF<sup>1</sup> <sup>1</sup>UFSM – Fisiologia e Farmacologia, <sup>2</sup>UFSM – Ciência e Tecnologia dos Alimentos

**02.003** Chronic *trans* fat consumption facilitate the development of hyperactive behavior. Pase CS, Roversi Kr, Trevizol F, Kuhn FT, Burger ME UFSM

**02.004** N-acetylcysteine protects the rat brain against aspartame-induced oxidative stress. Finamor IA<sup>1</sup>, Pês TS<sup>1</sup>, Ourique GM<sup>1</sup>, Londero EP<sup>1</sup>, Scheid T<sup>2</sup>, Llesuy SF<sup>3</sup>, Partata WA<sup>2</sup>, Pavanato MA<sup>1</sup> <sup>1</sup>UFSM, <sup>2</sup>UFRGS, <sup>3</sup>UBA

**02.005** Intrahippocampal infusion of spermidine improves memory persistence: Involvement of protein kinases A and C. Gais MA, Signor C, Girardi BA, Porto GP, Muller M, Rubin M, Mello CF UFSM

**02.006** Neuromotor impairment and anxiogenic effects in adolescent and adult female rats treated with ethanol following a binge drinking pattern. Fernandes LMP, Santana LNS, Lopes KS, Silva ML, Luz DA, Barros MA, Barros MA, Fontes-Júnior EA, Lima RR, Maia CSF ICS-UFPA

**02.007** Pharmacological Evaluation about the derivate pyrimidinone 4A in the Central Nervous System in a classical model of anxiety. Aquino CQA<sup>1</sup>, dos Anjos JV<sup>2</sup>, Carvalho MS<sup>3</sup>, Gavioli EC<sup>3</sup>, Soares Rachetti VP<sup>3</sup> <sup>1</sup>UFRN – Biofísica e Farmacologia, <sup>2</sup>UFPE – Química Fundamental, <sup>3</sup>UFRN – Biofísica e Farmacologia

**02.008** Spermidine-induced improvement of reconsolidation of memory involves calcium-dependent protein kinase in rats. Girardi BA<sup>1</sup>, Signor C<sup>2</sup>, Muller M<sup>1</sup>, Gais MA<sup>1</sup>, Schoffer AP<sup>1</sup>, Rubin MA<sup>3</sup> <sup>1</sup>UFSM – Farmacologia, <sup>2</sup>UFSM – Bioquímica, <sup>3</sup>UFSM – Farmacologia/Bioquímica

**02.009** Effects of 5-HT<sub>3</sub> receptors antagonist ondansetron on anxiety-like behaviour generated by withdrawal from alcohol. Freire BTS<sup>1</sup>, Silva CMV<sup>1</sup>, Gavioli EC<sup>1</sup>, Soares-Rachetti VP<sup>1</sup> UFRN – Biofísica e Farmacologia

**02.010** Effect of cyclooxygenase-2 inhibitors on pentylenetetrazol (PTZ)-induced seizures in mice. Temp FR, Santos AC, Marafija JR, Jesse AC,



Milanesi LH, Hessel AT, Lenz QF, Rambo LM, Mello CF UFSM – Fisiologia e Farmacologia

**02.011** **Methylprednisolone improves the neuromuscular transmission at 50 Hz only after being transported into the nerve motor.** Ambiel CR<sup>1</sup>, Dal Belo CA<sup>2</sup>, Corrado AP<sup>3</sup>, Correia-De-Sá P<sup>4</sup>, Alves-Do-Prado W<sup>5</sup>  
<sup>1</sup>UEM – Ciências Fisiológicas, <sup>2</sup>Unipampa – Farmacologia, <sup>3</sup>FMRP – Farmacologia, <sup>4</sup>UP – Imuno-Fisiologia e Farmacologia, <sup>5</sup>UEM – Farmacologia e Terapêutica

**02.012** **Central effects of aqueous extract of yellow and purple passion fruit leaves in mice.** Ayres ASFSJ<sup>1</sup>, Lima LA<sup>1</sup>, Soares TC<sup>2</sup>, Ayres DDJ<sup>1</sup>, Rachetti VPS<sup>1</sup>, Zucolotto SM<sup>2</sup>, Gavioli EC<sup>1</sup>  
<sup>1</sup>UFRN – Biofísica e Farmacologia, <sup>2</sup>UFRN – Farmácia

**02.013** **Effects of topiramate on anxiety related behaviors in ethanol abstinent rats.** Ayres DDJ, Soares-Rachetti VP, Gavioli EC, Ayres ASFSJ UFRN – Biofísica e Farmacologia

**02.014** **Agmatine reverses reserpine-induced orofacial dyskinesia in mice: Role of oxidative stress, nitric oxide and glutamate NMDA receptors.** Cunha AS<sup>1</sup>, Matheus FC<sup>2</sup>, Santos DB<sup>3</sup>, Colle D<sup>3</sup>, Moretti M<sup>4</sup>, Cunha MP<sup>3</sup>, Rodrigues AL<sup>3</sup>, Farina M<sup>3</sup>, Prediger RD<sup>1</sup>  
<sup>1</sup>UFSC – Farmacologia, <sup>2</sup>UFSC – Farmacologia, <sup>3</sup>UFSC – Bioquímica, <sup>4</sup>UFSC – Farmacologia / Bioquímica

**02.015** **Behavioral impairment induced by different doses of reserpine in mice: Relationship with tyrosine hydroxylase levels.** Freitas CM<sup>1</sup>, Busanello A<sup>1</sup>, Leal CQ<sup>2</sup>, Peroza LR<sup>3</sup>, Schaffer LF<sup>1</sup>, Krum BN<sup>2</sup>, Fachinetti R<sup>1,3</sup>  
<sup>1</sup>UFSM – Farmacologia, <sup>2</sup>UFSM – Farmácia, <sup>3</sup>UFSM – Bioquímica Toxicológica

**02.016** **Is there a central site that modulates peripheral inflammation in the rat?** Frade TIC<sup>1</sup>, Bakhle YS<sup>2</sup>, Francischi JN<sup>1</sup>

<sup>1</sup>ICB-UFMG – Farmacologia, <sup>2</sup>Imperial College

**02.017** **Riparina III effect of the reversal of anhedonia and abandonment in animals exposed to chronic stress.** Vasconcelos AS, Oliveira ICM, Rodrigues GC, Oliveira SC, Vidal LMT, Chaves RC, Castro LA, Lopes IS, Pontes MCD, Sousa FCF UFC – Fisiologia e Farmacologia

**02.018** **Inosine attenuates inflammatory and nociceptive responses in a murine multiple sclerosis model.** Junqueira SC<sup>1,2</sup>, Lieberknecht V<sup>1,2</sup>, Albert TB<sup>2</sup>, Peña MC<sup>1</sup>, Coelho IS<sup>1</sup>, Mack JM<sup>3</sup>, Rodrigues AL<sup>1</sup>, Calixto JB<sup>4</sup>, Santos ARS<sup>1</sup>, Dutra RC<sup>1,2,3</sup>  
<sup>1</sup>UFSC – Neurociências, <sup>2</sup>LAIF-UFSC-Araranguá, SC; <sup>3</sup>UFSC – Farmacologia, <sup>4</sup>CiENP

**02.019** **Administration of 2-araquidonoilglicerol (2AG) in medial pre-frontal cortex induced anxiolytic-like effects in rats.** Lima RCO, Almeida-Santos AF, Aguiar DC ICB-UFMG – Farmacologia

**02.020** **Treatment with cilostazol reverts the cognitive impairment caused by chronic cerebral hypoperfusion in rats.** Godinho J, Bacarin CC, Ferreira EDF, Zaghi GGD, Oliveira RMW, Milani H UEM – Farmacologia e Terapêutica

#### 04. Inflammation

**04.001** **Microbiota is important to 5-fluorouracil-induced intestinal mucositis in mice.** Menezes-Garcia Z<sup>1</sup>, Arifa RDN<sup>1</sup>, Acúrcio LB<sup>1</sup>, Lima RL<sup>1</sup>, Brito CB<sup>1</sup>, Teixeira MM<sup>2</sup>, Souza DG<sup>1</sup>  
<sup>1</sup>UFMG – Microbiologia, <sup>2</sup>UFMG – Imunologia e Bioquímica

**04.002** **Effect of high dose intravenous immunoglobulin (IVIg) therapy in the treatment of severe dengue.** Rocha RPF<sup>1</sup>, Costa VV<sup>1</sup>, Fagundes CT<sup>2</sup>, Valadão DF<sup>1</sup>, Avila TV<sup>1</sup>, Cisalpino D<sup>1</sup>, Souza PR<sup>1</sup>, Ribeiro LS<sup>1</sup>, Queiroz CMJ<sup>3</sup>, Silva TA<sup>3</sup>, Dias ACF<sup>1</sup>, Verri WA<sup>4</sup>, Teixeira MM<sup>5</sup>, Souza DG<sup>1</sup>  
<sup>1</sup>ICB-UFMG – Microbiologia, <sup>2</sup>UFMG –

Microbiologia / Trinity Biomedical Sciences, <sup>3</sup>FO-UFMG – Patologia Oral, <sup>4</sup>UEL – Patologia, <sup>5</sup>UFMG – Bioquímica e Imunologia

**04.003 Expression of inducible nitric oxide synthase (iNOS) in heart and kidney of mice with collagen-induced arthritis (CIA).** Zochio GP<sup>1</sup>, Carlos CP<sup>2</sup>, Girol AP<sup>3</sup>, Taieiro EF<sup>4</sup>, Chies AB<sup>1</sup> <sup>1</sup>FAMEMA – Farmacologia, <sup>2</sup>FACERES – Medicina, <sup>3</sup>FIPA – Imunohistoquímica, <sup>4</sup>FAMEMA – Bioquímica Básica

**04.004 *In vitro* and *in vivo* immunomodulatory mechanisms involved in the anti-inflammatory activity of subfraction 4 (SF4) of *Echinodorus macrophyllus* (Kunth.) Mich (Alismataceae).** Silva GP<sup>1</sup>, Fernandes DC<sup>1</sup>, Vigliano MV<sup>1</sup>, Pinto FA<sup>1</sup>, Santos MS<sup>1</sup>, Martino TM<sup>1</sup>, Caxito ML<sup>1</sup>, Justo MG<sup>1</sup>, Sabino KCC<sup>1</sup>, Coelho MGP<sup>1</sup> <sup>1</sup>UERJ – Bioquímica

**04.005 Role of advanced glycation end-products on glucocorticoid-induced mastocytopenia and mast cells hyporeactivity.** Santoro TT, Torres RC, Silva PMR, Martins MA, Carvalho VF IOC-Fiocruz – Inflamação

**04.006 Epigenetics alterations is involved in reduced inflammatory response in intrauterine undernourishment.** Ballico MM<sup>1</sup>, Carvalho MHC<sup>1</sup>, Câmara NOS<sup>2</sup>, Landgraf RG<sup>3</sup>, Landgraf MA<sup>1</sup> <sup>1</sup>ICB-USP – Farmacologia, <sup>2</sup>ICB-USP – Imunologia, <sup>3</sup>Unifesp – Inflamação e Farmacologia Vascular

**04.007 Arginase contributes to lung fibrotic response in silicotic mice.** Dias DF, Ciambarella BT, Carvalho VF, Martins MA, Silva PMR IOC-Fiocruz

**04.008 Intrauterine undernourishment reduced leptin receptor and toll-like receptor-4 expression and modulate acute lung inflammation.** Balbino AM<sup>1</sup>, Torres TC<sup>1</sup>, Fernandes L<sup>1</sup>, Landgraf MA<sup>2</sup>, Landgraf

RG<sup>1</sup> <sup>1</sup>Unifesp-Diadema – Inflamação e Farmacologia Vascular, <sup>2</sup>ICB-USP – Farmacologia

**04.009 Involvement of adenosine receptors in inflammation induced by copper in zebrafish larvae.** Cruz FF<sup>2,1</sup>, Leite CE<sup>1</sup>, Maboni LO<sup>3</sup>, Pereira TCB<sup>2</sup>, Bogo MR<sup>3,2</sup>, Bonan CD<sup>3</sup>, Campos MM<sup>4,1</sup>, Battastini AMO<sup>5</sup>, Morrone FB<sup>2,6</sup> <sup>1</sup>PUCRS – Toxicologia e Farmacologia, <sup>2</sup>PUCRS – Medicina e Ciências da Saúde, <sup>3</sup>PUCRS – Biociências, <sup>4</sup>PUCRS – Odontologia, <sup>5</sup>UFRGS – Bioquímica, <sup>6</sup>PUCRS – Farmácia

**04.010 Protease inhibitors promote resolution of the acute inflammation associated with increased intact form of annexin-A1.** Vago JP<sup>1</sup>, Lima GLN<sup>1</sup>, Caux TR<sup>2</sup>, Tavares LP<sup>1</sup>, Lima KM<sup>1</sup>, Ribeiro ALC<sup>1</sup>, Pinho V<sup>1</sup>, Perretti M<sup>4</sup>, Teixeira MM<sup>5</sup>, Sousa LP<sup>1</sup> <sup>1</sup>FF-UFMG – Análises Clínicas e Toxicológicas, <sup>2</sup>ICB-UFMG – Morfologia, <sup>4</sup>QMUL, <sup>5</sup>ICB-UFMG – Bioquímica e Imunologia, ICB

**04.011 Purinergic signaling involving NTPDase 2 and P2Y1 receptors contributes to endothelial leukocyte-adhesion in schistosomal inflammation.** Oliveira SDS<sup>1</sup>, Oliveira NF<sup>1</sup>, Savio LEB<sup>2</sup>, Meyer-Fernandes JR<sup>3</sup>, Ornelas FGI<sup>4</sup>, Ferreira ZS<sup>5</sup>, Coutinho-Silva R<sup>2</sup>, Silva CLM<sup>1</sup> <sup>1</sup>ICB-UFRJ, <sup>2</sup>BCCF-UFRJ, <sup>3</sup>IBqM-UFRJ, <sup>4</sup>IB-USP, <sup>6</sup>UFRJ

**04.012 High doses of inhaled corticosteroid and periodontal disease alter NTPDase activity in blood serum of rats.** Medeiros LF<sup>1</sup>, Scarabelot VL<sup>2</sup>, Cavagni J<sup>2</sup>, Detanico BC<sup>2</sup>, Rozisky JR<sup>1</sup>, Daudt LD<sup>2</sup>, Gaio EJ<sup>2</sup>, Battastini AMO<sup>3</sup>, Ferreira MBC<sup>1</sup>, Rosing CK<sup>2</sup>, Torres ILS<sup>1</sup> <sup>1</sup>UFRGS – Farmacologia, <sup>2</sup>UFRGS, <sup>3</sup>UFRGS – Bioquímica

**04.013 Inflammatory effects in isolated intestine during ischemia and reperfusion in rats.** Ricardo-da-Silva FY<sup>1</sup>, Thaís Fantozzi E<sup>1</sup>, Bernardez-Amorim MB<sup>1</sup>,

Breithaupt-Faloppa AC<sup>2</sup>, Oliveira-Filho RM<sup>1</sup>, Vargaftig BB<sup>1</sup>, Tavares-de-Lima W<sup>1</sup> <sup>1</sup>ICB-USP – Farmacologia, <sup>2</sup>FMUSP-HC-InCor

**04.014 *In vivo* PCB126 exposure impairs leukocyte activation by gpcr-induced pathway.** Shimada ALB, Cruz W, Rodrigues S, Azevedo R, Dorr F, Fock R, Pinto E, Farsky S FCF-USP – Análises Clínicas e Toxicológicas

**04.015 Involvement of TLR2/MYD88/NF-KB pathway regulating the expression of IL-18 in the pathogenesis of irinotecan-induced intestinal mucositis.** Wong DVT<sup>1</sup>, Batista GLP<sup>1</sup>, Borges VF<sup>2</sup>, Wanderley CWS<sup>1</sup>, Bem AX<sup>1</sup>, Gonzales RH<sup>1</sup>, Andrade CL<sup>1</sup>, Teixeira MA<sup>1</sup>, Brito GAC<sup>3</sup>, Lima-Júnior RCP<sup>1</sup>, Cunha FQ<sup>2</sup>, Ribeiro RA<sup>1</sup> <sup>1</sup>UFC – Physiology and Pharmacology, <sup>2</sup>FMRP-USP, <sup>3</sup>UFC – Morphology

**04.016 Kinin B1 receptor lack influences bone healing in a mouse model of femur critical-size defect in streptozotocin-induced type-1 diabetes.** Cignachi NP<sup>1</sup>, Pesquero JB<sup>2</sup>, Oliveira RB<sup>1</sup>, Etges A<sup>3</sup>, Campos MM<sup>4</sup> <sup>1</sup>PUCRS – Odontologia, <sup>2</sup>Unifesp – Biofísica, <sup>3</sup>UFPEL – Odontologia, <sup>4</sup>INTOX-PUCRS

**04.017 Lipoxin A4 protects mice during severe malaria by modulation of HO-1 and ICAM-1 expression.** Pádua TA<sup>1</sup>, Souza MC<sup>1</sup>, Torres ND<sup>1</sup>, Costa MF<sup>2,1</sup>, Candea ALP<sup>1</sup>, Costa T<sup>2,1</sup>, Seito LN<sup>1</sup>, Penido C<sup>2,1</sup>, Estado V<sup>3</sup>, Antunes B<sup>3</sup>, Silva L<sup>4</sup>, Pinheiro AA<sup>4</sup>, Caruso-Neves C<sup>4</sup>, Tibiriçá E<sup>3</sup>, Carvalho L<sup>5</sup>, Henriques MG<sup>1,2</sup> <sup>1</sup>Farmanguinhos-Fiocruz – Applied Pharmacology, <sup>2</sup>INCT-IDN-CDTS-Fiocruz, <sup>3</sup>IOC-Fiocruz – Cardiovascular Investigation, <sup>4</sup>IBCCF-UFRJ, <sup>5</sup>IOC-Fiocruz – Malaria Research

**04.018 Endogenous LXA<sub>4</sub> contributes to tolerance to experimental severe malaria.** Torres ND<sup>1</sup>, Souza MC<sup>1</sup>, Padua TA<sup>1</sup>, Costa MS<sup>1</sup>, Candea ALP<sup>1</sup>, Costa TEMM<sup>1</sup>, Seito LN<sup>1</sup>, Penido C<sup>2</sup>, Estado V<sup>3</sup>, Antunes B<sup>3</sup>, 46th Brazilian Congress of Pharmacology and Experimental Therapeutics

Antunes B<sup>3</sup>, Tibiriçá E<sup>3</sup>, Tibiriçá E<sup>3</sup>, Carvalho L<sup>4</sup>, Henriques MG<sup>1</sup> <sup>1</sup>Farmanguinhos-Fiocruz – Farmacologia Aplicada, <sup>2</sup>CDTS-Fiocruz, <sup>3</sup>IOC-Fiocruz – Investigação Cardiovascular, <sup>4</sup>IOC-Fiocruz – Malária

**04.019 Effect of acute melatonin administration in a model of chronic orofacial pain.** Scarabelot VL<sup>1</sup>, Oliveira C<sup>2</sup>, Medeiros LF<sup>1</sup>, Marques PR<sup>2</sup>, Cioato SG<sup>2</sup>, Adachi LS<sup>2</sup>, Souza A<sup>3</sup>, Quevedo A<sup>1</sup>, Caumo W<sup>2</sup>, Torres ILS<sup>4</sup> <sup>1</sup>UFRGS – Fisiologia, <sup>2</sup>UFRGS – Medicina, <sup>3</sup>UFRGS, <sup>4</sup>ICBS-UFRGS – Farmacologia

**04.020 Targeting the sphingosine pathway to resolution of inflammatory response induced by LPS.** Perez D, Athayde RM, Reis AC, Menezes PVA, Teixeira MM, Sousa LP, Pinho V UFMG

**04.021 Effect of pipercolyl xylidide (PPX), a non-anesthetic bupivacaine metabolite in a short-term A/J murine model of asthma marked by resistance to steroid therapy.** Cotias AC<sup>1</sup>, Serra MF<sup>1</sup>, Rodrigues VC<sup>1</sup>, Olsen PC<sup>1</sup>, Pão CRR<sup>1</sup>, Costa JCS<sup>2</sup>, Cordeiro RSB<sup>1</sup>, Silva PMR, Silva PMR<sup>1</sup>, Martins MA<sup>1</sup> <sup>1</sup>IOC-Fiocruz – Inflamação, <sup>2</sup>Farmanguinhos-Fiocruz

**04.022 cAMP elevating agents induce resolution of acute inflammation dependent on annexin A1.** Lima KM<sup>1</sup>, Caux TR<sup>2</sup>, Vago JP<sup>1</sup>, Tavares LP<sup>3</sup>, Aribada RG<sup>2</sup>, Carmo AAF<sup>1</sup>, Galvão I<sup>3</sup>, Costa BRC<sup>2</sup>, Soriani FM<sup>4</sup>, Perretti M<sup>5</sup>, Silva PMR<sup>6</sup>, Pinho V<sup>1</sup>, Teixeira MM<sup>3</sup>, Sousa LP<sup>7</sup> <sup>1</sup>UFMG – Morfologia, <sup>2</sup>UFMG – Análises Clínicas e Toxicológicas, <sup>3</sup>UFMG – Bioquímica e Imunologia, <sup>4</sup>UFMG – Biologia Geral, <sup>5</sup>QMUL, <sup>6</sup>Fiocruz – Fisiologia e Farmacodinâmica, <sup>7</sup>FaFar-UFMG – Análises Clínicas e Toxicológicas

**04.023 Healing activity of a protein fraction of latex *Himatanthus drasticus* (HdLP) for topical use in an experimental model of cutaneous ulcers.** Paiva YTCN<sup>1</sup>,

Souza TFG<sup>1</sup>, Vasconcelos MS<sup>2</sup>, Carmo LD<sup>1</sup>, Moreno LMC<sup>1</sup>, Figueiredo IST<sup>1</sup>, Fonseca SGC<sup>3</sup>, Ramos MV<sup>2</sup>, Teixeira MDA<sup>1</sup>, Alencar NMN<sup>1</sup> <sup>1</sup>UFC – Farmacologia e Bioquímica, <sup>2</sup>UFC – Bioquímica e Biologia Molecular, <sup>3</sup>UFC – Farmácia

**04.024** Lymphatic system influence on acute lung injury after intestinal ischemia/reperfusion in female rats. Fantozzi ET<sup>1</sup>, Breithaupt-Faloppa AC<sup>2</sup>, Ricardo-da-Silva FY<sup>1</sup>, Bernardez-Amorim MB<sup>1</sup>, Oliveira-Filho RM<sup>1</sup>, Tavares-de-Lima W<sup>1</sup> <sup>1</sup>ICB-USP – Pharmacology, <sup>2</sup>FMUSP-HC-InCor

**04.025** Lung inflammatory process after brain death in rats: sexual dimorfism. Breithaupt-Faloppa AC<sup>1</sup>, Ferreira SG<sup>1</sup>, Kudo GK<sup>1</sup>, Armstrong Jr R<sup>1</sup>, Tavares-de-Lima W<sup>2</sup>, Sannomiya P<sup>1</sup>, Moreira LP<sup>1</sup> <sup>1</sup>FMUSP-HC-InCor – Cardiovascular Surgery, <sup>2</sup>ICB-USP – Pharmacology

**04.026** Pravastatin and rosuvastatin *in vivo* or *in vitro* inhibit platelet adhesion to fibrinogen. Goulart G, Naime ACA, Lopes Pires ME, Monteiro FP, Marcondes S Unicamp – Farmacologia

**04.027** Treatment with *Saccharomyces boulardii* ameliorated the function gastrointestinal and reverted the inflammatory events in experimental intestinal mucositis induced by 5-fluorouracil. Xavier AF<sup>1</sup>, Justino PFC<sup>1</sup>, Morais CM<sup>1</sup>, Nogueira AF<sup>1</sup>, Malveira CB<sup>1</sup>, Girão DKFB<sup>1</sup>, Souza EP<sup>2</sup>, Lima MAS<sup>3</sup>, Mendes TS<sup>2</sup>, Lima RF<sup>1</sup>, Souza MHL<sup>1</sup>, Ribeiro RA<sup>1</sup>, Soares PMG<sup>2</sup> <sup>1</sup>UFC – Fisiologia e Farmacologia, <sup>2</sup>UFC – Morfologia, <sup>3</sup>UECE – Ciências Fisiológicas

**04.028** Anti-inflammatory activity of the aqueous extract of the bark of *Chrysobalanus icaco* Linnaeus. Oliveira TB, Guerra ASHS, Mota FVB, Carvalho JA, Silva BIM, Silva TG UFPE – Antibióticos

**04.029** The polyphenol resveratrol prevents the allergic pulmonary eosinophilic inflammation in obese mice via AMPK activation and insulin resistance amelioration. André DM, Calixto MC, Alexandre EC, Sollon CS, Anhê GF, Antunes E Unicamp – Farmacologia

**04.030** Down-modulation of activated human neutrophil by LMW-Fucoidan: Role of microparticle. Moraes JA<sup>1</sup>, Frony AC<sup>1</sup>, Barcellos-de-Souza P<sup>1</sup>, Boisson-Vidal C<sup>2</sup>, Barja-Fidalgo TC<sup>1</sup> <sup>1</sup>UERJ – Biologia Celular, <sup>2</sup>INSERM U765

**04.031** Effect of *Helicobacter pylori* urease (HPU) in endothelial cells. Souza MJ<sup>1</sup>, Moraes JA<sup>1</sup>, Nascimento-Silva V<sup>1</sup>, Helal-Neto E<sup>1</sup>, Morgado-Diaz J<sup>2</sup>, De-Freitas-Júnior J<sup>2</sup>, Uberti A<sup>3</sup>, Scopel-Guerra A<sup>3</sup>, Morandi V<sup>1</sup>, Carlini CR<sup>3</sup>, Barja-Fidalgo TC<sup>1</sup> <sup>1</sup>UERJ – Biologia Celular, <sup>2</sup>InCA, <sup>3</sup>UFRGS

**04.032** PKC and PKG activate NADPH oxidase and increase reactive oxygen species generation in platelets of rats treated with lipopolysaccharide. Lopes-Pires ME, Naime ACA, Antunes E, Marcondes S Unicamp – Farmacologia

**04.033** Evaluation of anti-edema activity of microspheres of poly- $\epsilon$ -caprolactone containing usnic acid. Barbosa JAP<sup>1</sup>, Silva CVNS<sup>2</sup>, Bezerra TO<sup>1</sup>, Santana MAN<sup>3</sup>, Silva TG<sup>1</sup>, Magalhães NSS<sup>2</sup>, Santos NPS<sup>4</sup>, Maia MBS<sup>5</sup> <sup>1</sup>UFPE – Antibióticos, <sup>2</sup>LIKA-UFPE – Bioquímica, <sup>3</sup>UFPE – Histologia, <sup>4</sup>UFPE – Biotecnologia, <sup>5</sup>UFPE – Fisiologia

**04.034**  $\delta$ PKC and AKT stimulate NO/CGMP/PKG pathway in platelets of rats treated with lipopolysaccharide. Frade JO, Lopes-Pires ME, Antunes E, Marcondes S FCM-Unicamp – Pharmacology

**04.035** Gamma delta T lymphocyte modulation by lipoxygenase-derived mediators. Negreiros C<sup>1</sup>, Cascabulho C<sup>2</sup>, Pons A<sup>2</sup>, Henriques MG<sup>1</sup>, Costa MF<sup>3</sup>,

Penido C<sup>1</sup> <sup>1</sup>Farmanguinhos-Fiocruz – Farmacologia Aplicada, <sup>2</sup>Fiocruz – Inovações em Terapias, Ensino e Bioprodutos

**04.036 PDTC inhibits UVB-induced skin inflammation and oxidative stress in hairless mice and exhibits antioxidant activity *in vitro*.** Ivan ALM<sup>1</sup>, Campanini MZ<sup>1</sup>, Martinez RM<sup>1</sup>, Ferreira VS<sup>1</sup>, Steffen VS<sup>1</sup>, Vicentini FTMC<sup>2</sup>, Vilela FMP<sup>2</sup>, Martins FS<sup>2</sup>, Zarpelon AC<sup>3</sup>, Cunha TM<sup>4</sup>, Fonseca MJV<sup>2</sup>, Baracat MM<sup>1</sup>, Georgetti SR<sup>1</sup>, Verri WA<sup>3</sup>, Casagrande R<sup>1</sup> <sup>1</sup>UEL – Ciências Farmacêuticas, <sup>2</sup>FCFRP-USP – Ciências Farmacêuticas, <sup>3</sup>UEL – Ciências Patológicas, <sup>4</sup>FMRP-USP – Farmacologia

**04.037 Carvacrol/beta-cyclodextrin inclusion complex reduces muscle inflammation in rats.** Souza ACA<sup>1</sup>, Santana D<sup>1</sup>, Abreu FF<sup>1</sup>, Moraes J<sup>1</sup>, Araújo AA<sup>2</sup>, Quintans Júnior LJ<sup>3</sup>, De Santana JM<sup>4</sup>, Camargo EA<sup>1</sup> <sup>1</sup>LAFAPI-UFS – Fisiologia, <sup>2</sup>UFS – Farmácia, <sup>3</sup>UFS – Fisiologia, <sup>4</sup>LAPENE-UFS – Fisioterapia

**04.038 Complement activation on platelets in experimental cerebral malaria.** Rodrigues FG<sup>1</sup>, Campos MHA<sup>1</sup>, Assis FA<sup>1</sup>, Val CH<sup>1</sup>, Brant F<sup>1</sup>, Silva BC<sup>2</sup>, Arifa RDN<sup>3</sup>, Rachid MA<sup>2</sup>, Machado FS<sup>1</sup>, Teixeira AL<sup>4</sup>, Teixeira MM<sup>1</sup> <sup>1</sup>ICB-UFG – Biochemistry and Immunology, <sup>2</sup>ICB-UFG – Pathology, <sup>3</sup>ICB-UFG – Microbiology, <sup>4</sup>UFG – Internal Medicine

**04.039 Intestinal mucositis induced by association of irinotecan and 5-fluorouracil in C57BL/6 mice: involvement of TNF- $\alpha$  and IL-6.** Pereira VBM<sup>1</sup>, Wong DVT<sup>1</sup>, Melo AT<sup>1</sup>, Assis-Júnior EM<sup>1</sup>, Brito GAC<sup>2</sup>, Ribeiro RA<sup>1</sup>, Lima-Júnior RCP<sup>1</sup> <sup>1</sup>UFC – Physiology and Pharmacology, <sup>2</sup>UFC – Morphology

**04.040 5-FU increases the ligature-induced alveolar bone loss in rats.** Calcia TBB<sup>1</sup>, Araújo VMA<sup>1</sup>, Melo IM<sup>2</sup>, Guimarães MV<sup>2</sup>, Nogueira GHC<sup>1</sup>, Ribeiro RA<sup>1</sup>, Lima V<sup>1</sup>

<sup>1</sup>UFC – Fisiologia e Farmacologia, <sup>2</sup>UFC – Clínica Odontológica

**04.041 Anti-inflammatory activity of Camphor on acute inflammatory response.** Silva-Filho SE<sup>1</sup>, Silva-Comar FMS<sup>1</sup>, Rocha BA<sup>1</sup>, Aguiar RP<sup>1</sup>, Ames FQ<sup>1</sup>, Freitag AF<sup>1</sup>, Spironello RA<sup>1</sup>, Rodrigues PJ<sup>1</sup>, Cardia GFE<sup>1</sup>, Bersani-Amado CA<sup>1</sup>, Cuman RKN<sup>1</sup> <sup>1</sup>UEM – Farmacologia e Terapêutica

**04.057 TRPV1 antagonism by capsazepine modulates innate immune response in mice infected with *Plasmodium berghei* Anka.** Fernandes ES<sup>1,2</sup>, Brito CXL<sup>1</sup>, Teixeira SA<sup>3</sup>, Barboza R<sup>4</sup>, dos Reis AS<sup>3</sup>, Azevedo-Santos APS<sup>5</sup>, Muscará M<sup>3</sup>, Costa SKP<sup>3</sup>, Marinho CRF<sup>3</sup>, Brain SD<sup>2</sup>, Grisotto MAG<sup>1,6</sup> <sup>1</sup>Ceuma, <sup>2</sup>King's College – Cardiovascular Division, <sup>3</sup>USP, <sup>4</sup>Unifesp, <sup>5</sup>UFMA, <sup>6</sup>Instituto Florence

## 05. Pain and Nociception

**05.001 Local administration of mangiferin prevents hyperalgesia in models of inflammatory pain.** Rocha LW, Parada CA Unicamp – Biologia Estrutural e Funcional

**05.002 Beneficial effects of docosahexaenoic acid supplementation on cyclophosphamide-induced alterations in mice.** Freitas RDS<sup>1,2</sup>, Costa KM<sup>1</sup>, Campos MM<sup>1,2,3</sup> <sup>1</sup>PUCRS – Medicina e Ciências da Saúde, <sup>2</sup>INTOX-PUCRS, <sup>3</sup>PUCRS – Faculdade de Odontologia

**05.003 Melatonin treatment entrains the rest-activity circadian rhythm in rats with chronic inflammation.** Torres ILS<sup>1</sup>, Laste G<sup>1</sup>, Vidor L<sup>1</sup>, de Macedo IC<sup>3</sup>, Rozisky JR<sup>1</sup>, Rozisky JR<sup>1</sup>, Medeiros LF<sup>1</sup>, Souza A<sup>1</sup>, Souza A<sup>1</sup>, Meurer L<sup>2</sup>, Meurer L<sup>2</sup>, Souza ICC<sup>3</sup>, Caumo W<sup>1</sup> <sup>1</sup>UFRGS – Farmacologia, <sup>2</sup>HCPA, <sup>3</sup>UFPEl

**05.004 Antinociceptive and anti-inflammatory activities of LQFM008 molecule.** Silva DPB<sup>1</sup>, Florentino IF<sup>1</sup>, Oliveira LP<sup>1</sup>, Menegatti R<sup>2</sup>, Costa EA<sup>1</sup>

<sup>1</sup>DCiF-ICB-UFG – Natural Products, <sup>2</sup>FF-UFG – Medicinal Pharmaceutical Chemistry

**05.005 Involvement of kinins on pain induced by treatment with paclitaxel.** Oliveira SM<sup>1</sup>, Brusco I<sup>2</sup>, Bastos C<sup>2</sup>, Dalla Pozza CC<sup>2</sup>, Rigo F<sup>3</sup>, Trevisan G<sup>4</sup>, Tonello R<sup>2</sup>, Ferreira J<sup>5</sup> <sup>1</sup>UFSM – Bioquímica e Biologia Molecular, <sup>2</sup>UFSM, <sup>3</sup>UFMG, <sup>4</sup>UNESC, <sup>5</sup>UFSC

**05.006 Effects of simvastatin on acute and neuropathic pain models in rats.** Corso CR<sup>1</sup>, Martins DF<sup>2</sup>, Werner MFP<sup>1</sup> <sup>1</sup>UFPR – Farmacologia, <sup>2</sup>UNESC – Ciências da Saúde

**05.007 The involvement of opioid system on analgesia induced by environmental enrichment on injured rats.** Kimura LF<sup>1</sup>, Mattaraia VGM<sup>2</sup>, Picolo G<sup>1</sup> <sup>1</sup>Ibu – Dor e Sinalização, <sup>2</sup>Ibu – Biotério Central

**05.008 Ovariectomy as a pre-clinical model of spontaneous scratching behaviour in mice.** Machado GDB<sup>1,2</sup>, Canevese FF<sup>1,2</sup>, Pereira PJS<sup>3,2</sup>, Campos MM<sup>4,2,3</sup> <sup>1</sup>PUCRS – Medicina, <sup>2</sup>INTOX-PUCRS, <sup>3</sup>PUCRS – Biologia Molecular e Celular, <sup>4</sup>PUCRS – Odontologia

**05.009 Tingenone, a pentacyclic triterpene, induces peripheral antinociception due to NO/cGMP pathway activation in mice.** Veloso CC<sup>1</sup>, Rodrigues VG<sup>2</sup>, Ferreira RCM<sup>1</sup>, Duarte LP<sup>2</sup>, Klein A<sup>1</sup>, Duarte ID<sup>1</sup>, Romero TRL<sup>1</sup>, Perez AC<sup>1</sup> <sup>1</sup>UFMG – Farmacologia, <sup>2</sup>UFMG – Química

**05.010 Antinociceptive effect of monoterpene geraniol not involves opioid system.** La Rocca V<sup>1</sup>, Fonseca DV<sup>1</sup>, Nóbrega FFF<sup>2</sup>, Almeida RN<sup>1</sup> <sup>1</sup>UFPB – Psicofarmacologia, <sup>2</sup>CDSA-UFCG

**05.011 Melatonin analgesia is associated with improvement of the descending endogenous pain-modulating system in fibromyalgia: A Phase II, randomized, double-dummy, controlled trial.** Deitos A, Zanette SA, Vercelino R, Laste G, Rozisky

JR, Schwertner A, Machado CB, Xavier F, Souza ICC, Torres ILS, Caumo W HCPA-UFRGS

**05.012 Antinociceptive and anti-inflammatory activity of *Eugenia brasiliensis* in mice.** Simões RR<sup>1</sup>, Dal-Secco D<sup>2</sup>, Frederico MJ<sup>2</sup>, Costa AF<sup>2</sup>, Syracuse S<sup>2</sup>, Siebert DA<sup>3</sup>, Alberton MD<sup>3</sup>, Santos ARS<sup>2</sup> <sup>1</sup>UFSM, <sup>2</sup>UFSC, <sup>3</sup>FURG

**05.013 4-methyl-(4')-methyl-naphthalimide, a cyclic imide with important effects against inflammatory and cancer pain in mice.** Silva GF, Buzzi FC, Correa R, Cechinel Filho V, Quintão NLM Univali – Ciências da Saúde

**05.014 Essential role played by tumor necrosis factor alpha in urate crystal-induced inflammation and hypernociception in mice.** Bastos LFS<sup>1</sup>, Oliveira THC<sup>1</sup>, Amaral FA<sup>1</sup>, Dias ACF<sup>2</sup>, Oliveira VLS<sup>1</sup>, Tavares LD<sup>2</sup>, Costa VV<sup>1</sup>, Galvão I<sup>1</sup>, Soriani FM<sup>3</sup>, Sachs D<sup>4</sup>, Ryffel B<sup>5</sup>, Souza DG<sup>2</sup>, Teixeira MM<sup>1</sup> <sup>1</sup>UFMG – Biochemistry and Immunology, <sup>2</sup>UFMG – Microbiology, <sup>3</sup>UFMG – General Biology, <sup>4</sup>UNIFEI – Pharmacology, <sup>5</sup>CNRS – Molecular Immunology and Embryology

**05.015 Antinociceptive activity of *Citrus limon* (L.) Burm. f. essential oil in mice.** Monteiro-Silva JF<sup>1</sup>, Oliveira LMS<sup>1</sup>, Almeida EKC<sup>1</sup>, Silva NKGT<sup>1</sup>, Viana MDM<sup>1</sup>, Silva-Neto GJ<sup>1</sup>, Vieira ACS<sup>1</sup>, Sant'Ana AEG<sup>2</sup>, Alexandre-Moreira MS<sup>1</sup>, Campesatto EA<sup>1</sup> <sup>1</sup>UFAL – Pharmacology and Immunity, <sup>2</sup>IQB-UFAL – Natural Resources

**05.016 Mechanisms involved in the antinociceptive effect of 5-(1-(3-fluorophenyl)-1H-pyrazol-4-yl)-2H-tetrazole (LQFM-021)-new pyrazole derivative.** Florentino IF<sup>1</sup>, Oliveira LP<sup>1</sup>, Silva DPB<sup>1</sup>, Menegatti R<sup>2</sup>, Costa EA<sup>1</sup> <sup>1</sup>ICB-UFG, <sup>2</sup>FF-UFG

**05.017 The antipsychotic aripiprazole induces antinociceptive effects in animal models through partial agonism at**

**dopamine D2 receptors.** Almeida-Santos AF, Ferreira RCM, Aguiar DC, Romero TR, Moreira FA UFMG – Pharmacology

**05.018 Role of spinal cord PI3K, MAP kinases, and glial cells in superoxide anion-induced pain in mice.** Carvalho TT<sup>1</sup>, Calixto-Campos C<sup>1</sup>, Mizokami SS<sup>1</sup>, Pinho-Ribeiro FA<sup>1</sup>, Manchope MF<sup>1</sup>, Casagrande R<sup>2</sup>, Verri WA<sup>1</sup> <sup>1</sup>UEL – Ciências Patológicas, <sup>2</sup>UEL – Ciências Farmacêuticas

## 06. Cardiovascular and Renal

**06.001 Venous return related-pharmacotherapy is more prevalent in wheelchair non-athletes than athletes.** Paiva RCA, Garbeloti EJR, Restini CBA UNAERP

**06.002 Antihypertensive effect of the methanolic fraction of the essential oil of *Alpinia zerumbet* in Wistar rats.** Cunha GH<sup>1</sup>, Marques LARV<sup>2</sup>, Fechine FV<sup>2</sup>, Moraes MO<sup>2</sup>, Moraes MEA<sup>2</sup> <sup>1</sup>UFC – Enfermagem, <sup>2</sup>UFC – Farmacologia Clínica

**06.003 Loss of platelet antiaggregation activity in senescent endothelial cells and its recovery by polyphenols.** Silva GC<sup>2,1</sup>, Abbas M<sup>2</sup>, Ribeiro TP<sup>2</sup>, Burban M<sup>2</sup>, Toti F<sup>2</sup>, Braga FC<sup>3</sup>, Côrtes SF<sup>1</sup>, Schini-Kerth VB<sup>2</sup> <sup>1</sup>UFMG – Farmacologia, <sup>2</sup>UMR-CNRS, <sup>3</sup>UFMG – Farmácia

**06.004 Effect of the NAD(P)H oxidase inhibitor apocynin on oxidative stress induced by chronic ethanol consumption in the rats corpus cavernosum.** Leite LN<sup>1</sup>, Hipolito UV<sup>2</sup>, Tirapelli CR<sup>2</sup> <sup>1</sup>FMRP-USP, <sup>2</sup>EERP-USP

**06.005 Volume replacement during septic shock: are there significant differences in the CLP model?** Guarido KL, da Silva Santos JE UFSC – Farmacologia

**06.006 Bufalin induces vasoconstriction at pharmacological concentration in rabbit aorta and mesenteric rings by stimulation of the  $\alpha$ -adrenergic-PKC pathway.** Oliveira

IMB, Freire MSS, Farias VX, Santos CF, Nascimento NRF, Fonteles MC ISCB-UECE

**06.007 Influence of perivascular adipose tissue (PVAT) on vascular contractility in mice aortas.** Nobrega N, Reis D, Facine LM, Miranda CAS, Bonaventura D UFMG – Farmacologia

**06.008 Vasorelaxant, hypotensive and radical-scavenging activities of *Jaboticaba (Myrciaria cauliflora)*.** Andrade DML<sup>1</sup>, Reis CF<sup>1</sup>, Castro PFS<sup>1</sup>, Amaral NO<sup>2</sup>, Borges LL<sup>1</sup>, Stefany GR<sup>1</sup>, Gil ES<sup>1</sup>, Pedrino GR<sup>2</sup>, Conceição EC<sup>1</sup>, Rocha ML<sup>1</sup> <sup>1</sup>FF-UFG, <sup>2</sup>ICB-UFG

**06.009 Analysis of renal disorders *in vivo* and *in vitro* on diabetic rats.** Costa LLM<sup>1</sup>, Alves RS<sup>2</sup>, Seabra-Filho FT<sup>1</sup>, Cancio KS<sup>1</sup>, Marques KF<sup>1</sup>, Pereira JM<sup>1</sup>, Monteiro HSA<sup>1</sup>, Alves NTQ<sup>1</sup> <sup>1</sup>UFC – Fisiologia e Farmacologia, <sup>2</sup>UFC – Análises Clínicas e Toxicológicas

**06.010 Role of TNF- $\alpha$  in chronic ethanol consumption-induced oxidative stress: involvement of perivascular adipose tissue.** Simplicio JA<sup>1</sup>, Cunha TM<sup>1</sup>, Tirapelli CR<sup>2</sup> <sup>1</sup>FMRP-USP – Pharmacology, <sup>2</sup>EERP-USP – Pharmacology

**06.011 Reactivity of rat, guinea-pig, rabbits and human aortic rings to ouabain, bufalin and digoxin.** Martins ICMT, Oliveira IMB, Freire MSS, Santos CF, Nascimento NRF, Fonteles MC ISCB-UECE

**06.012 Pinitol attenuates experimental diabetic nephropathy.** Cortez LUAS, Paz IA<sup>1</sup> Sousa LGF, Santos CF, Nascimento NRF, Fonteles MC ISCB-UECE

**06.013 Treatment with doxycycline prevents the renal function impairment in rats subjected to kidney ischemia-reperfusion.** Cortês AL, Gonzalez SR, Melo PA, Lara LS ICB-UFRJ

**06.014 The vascular effects of d-pinitol in mouse small mesenteric arteries.** Moreira LN<sup>1</sup>, Côrtes SF<sup>1</sup>, Lemos VS<sup>2</sup> <sup>1</sup>UFMG –

**06.015** Increased resting tension abolishes the endothelial anti-contractile effect induced by phenylephrine in renal hypertensive (2K-1C) rat aorta. Silva BR, Grando MD, Bendhack LM FCFRP-USP

**06.016** Are the chronotropic effects of A1 adenosine receptors altered in hypertension? Câmara H, Rodrigues JQD, Silva Júnior ED, Godinho RO, Jurkiewicz A Unifesp – Farmacologia

**06.017** Cardioprotection evaluation of ipriflavone in spontaneously hypertensive rats. Castro QJT<sup>1</sup>, Mosqueira VCF<sup>1</sup>, Pereira SC<sup>1</sup>, Souza ACM<sup>1</sup>, Guimarães HN<sup>2</sup>, Leite R<sup>1</sup>, Grabe-Guimarães A<sup>1</sup> <sup>1</sup>CiPharma-UFOP, <sup>2</sup>DEE-UFMG

**06.018** Treatment with enalapril improves renal function in nephrectomized rats. Pereira JM, Costa PHS, Rodrigues FAP, Alves NTQ, Silva PLB, Coelho YP, Bona MD, Vasconcelos MJS, Alves RS, Monteiro HSA UFC – Farmacologia

**06.019** The Ca<sup>2+</sup> ionophore-induced relaxation involves NO-synthase and cyclooxygenase (COX) activation in renal hypertensive (2K-1C) but only NO-synthase in 2K rat aortas. Feitoza PR<sup>1</sup>, Silva BR, Bendhack LM FCFRP-USP – Física e Química

**06.020** Nitroxyl donor Angeli's salt-induced relaxation of rat veins compared to nitric oxide donors. Zuchi FC, Paulo M, Bendhack LM FCFRP-USP – Physics and Chemistry

**06.021** Effects of sildenafil treatment in experimental renovascular hypertension. Gomes IBS<sup>1</sup>, Dias AT<sup>2</sup>, Froussard J<sup>3</sup>, Cintra A<sup>3</sup>, Freitas FP<sup>2</sup>, Balarini CM<sup>4</sup>, Gava AL<sup>5</sup>, Meyrelles SS<sup>5</sup>, Vasquez EC<sup>6</sup> <sup>1</sup>UFES – Ciências Farmacêuticas, <sup>2</sup>UFES, <sup>3</sup>EMESCAM, <sup>4</sup>UFPB, <sup>5</sup>UFES – Ciências Fisiológicas, <sup>6</sup>UVV – Ciências Farmacêuticas

**08.001** Ipriflavone in a self-emulsifying drug delivery system (SEDDS) improves female sexual function in young and menopausal senescent hypertensive rats. Martins TA, Mendes JC, Mosqueira VCF, Grabe-Guimarães A, Rodovalho GV, Leite R CiPharma-UFOP

**08.002** Ipriflavone chronic treatment improves apomorphine induced genital vasocongestive arousal in ovariectomized and senescent hypertensive female rats. Mendes JC, Lopes IM, Martins TA, Mosqueira VCF, Grabe-Guimarães A, Rodovalho GV, Leite R CiPharma-UFOP

**08.003** Relaxant activity of new pde4 inhibitors on guinea pig airway smooth muscle. Martins IRR<sup>1</sup>, Nunes IKC<sup>2</sup>, Lima LM<sup>2</sup>, Barreiro E JL<sup>2</sup>, Silva BA<sup>1</sup> <sup>1</sup>DCF-UFPB, <sup>2</sup>LASSBio-UFRJ

**08.004** Administration of ketamine reduced depressive-like behavior induced by ovariectomy in rats. Oliveira C<sup>1,3,4</sup>, Moreira SFS<sup>3,4,5</sup>, Scarabelot VL<sup>2,3,4</sup>, Marques PR<sup>1,3,4</sup>, Medeiros LF<sup>2,3,4</sup>, Nunes EA<sup>2,3,4</sup>, Kuo J<sup>3,4</sup>, Macedo IC<sup>2,3,4</sup>, Muchale AV<sup>3,4</sup>, Caumo W<sup>1,3</sup>, Torres ILS<sup>1,2,3,4</sup> <sup>1</sup>UFRGS – Medicine, <sup>2</sup>UFRGS – Physiology, <sup>3</sup>UFRGS – Pharmacology <sup>4</sup>HCPA – Animal Experimentation <sup>5</sup>ICS-FM-UFPA.

**08.005** Resveratrol prevents the reproductive damage induced by sodium valproate on male rats. Dalenogare JF, Ourique GM, Saccol EMH, Pês TS, Glanzner WG, Pavanato MA, Barreto KP UFSM – Fisiologia e Farmacologia

**08.006** Relaxing effects of the new nitric oxide donor in isolated trachea from rats with experimental asthma. Castro PFS<sup>1,2</sup>, Batista AC<sup>3</sup>, Silva RS<sup>4</sup>, Rocha ML<sup>1</sup> <sup>1</sup>FF-UFG, <sup>2</sup>Universo, <sup>3</sup>FO-UFG, <sup>4</sup>FCFRP-USP

**08.007** Effect of subcutaneous serotonin injection on male rat sexual behavior *in*



**vivo.** Barbosa EC, Lumbard B, Linder AE  
UFSC – Farmacologia

**08.008** Strength training changes trachea reactivity by modulating prostanoids pathway on rat Wistar. Brito AF<sup>1</sup>, Silva AS<sup>2</sup>, Souza AA<sup>2</sup>, Ferreira PB<sup>1</sup>, Félix GS<sup>2</sup>, Sampaio RS<sup>1</sup>, Tavares RL<sup>2</sup>, Souza ILL<sup>1</sup>, Pereira RA<sup>2</sup>, Araujo LCC<sup>3</sup>, Miranda Neto M<sup>2</sup>, Miranda Neto M<sup>2</sup>, Silva BA<sup>4</sup> – <sup>1</sup>UFPB – Produtos Naturais e Sintéticos Bioativos, <sup>2</sup>UFPB – Treinamento Físico Aplicado ao Desempenho e à Saúde, <sup>3</sup>UFPB – Biologia Celular e Molecular, <sup>4</sup>UFPB – Ciências Farmacêuticas

**08.009** JME-173, non-anesthetic analogue of mexiletine, exerts spasmolytic action at least in part by inhibiting calcium influx in the airway smooth muscle. Carvalho KIM<sup>1</sup>, Santos-Filho OA<sup>1</sup>, Joca HC<sup>2</sup>, Cruz JS<sup>2</sup>, Silva ET<sup>3</sup>, Costa JCS<sup>3</sup>, Silva PMR<sup>1</sup>, Martins MA<sup>1</sup> – <sup>1</sup>IOC-Fiocruz, <sup>2</sup>LAMEX-UFGM, <sup>3</sup>Farmanguinhos-Fiocruz

**08.010** Effects of chronic administration of tamsulosin and tadalafil, alone or in combination, in rats with bladder outlet obstruction induced by chronic nitric oxide deficiency. Santos LCO, Sales LC, Sousa PRR, Silva BGB, Pamplona TL, Marinho LB, Santos JMS, Segundo SAS, Silva Júnior JVM, Cerqueira JBG, Maia RR, Gonzaga-Silva LF, Regadas RP – UFC – Cirurgia e Fisiologia e Farmacologia

## 09. Natural Products and Toxinology

**09.001** Neutralization of Bothrops snake venoms from Ecuador by antithrotoppic antivenom manufactured by Instituto Vital Brazil. Strauch MA<sup>1</sup>, da Cunha LER<sup>1</sup>, Brazil LM<sup>1</sup>, Castanheira PNS<sup>1</sup>, Castanheira PNS<sup>1</sup>, Meirelles LGR<sup>1</sup>, Tavares MSH<sup>2</sup>, Machado MM<sup>2</sup>, Melo PA<sup>2</sup> – <sup>1</sup>IVB, <sup>2</sup>UFRJ – Farmacologia das Toxinas

**09.002** Silvercatfish central nervous system depression by the essential oil of *Curitiba prismatica*. Garlet QI<sup>1</sup>, Silva LL<sup>1</sup>,

Amaral L<sup>2</sup>, Schindler B<sup>2</sup>, Watzlawick LF, Longhi SJ<sup>2</sup>, Baldisserotto B<sup>1</sup>, Heinzmann BM<sup>3</sup> – <sup>1</sup>UFMS – Farmacologia, <sup>2</sup>UFMS – Engenharia Florestal, <sup>3</sup>UFMS – Farmácia Industrial

**09.003** *In vitro* trypanocidal activity of betulinic acid and semi-synthetic derivatives. Bocalon LG, Tozatti MG, Marçal MG, Ferreira DS, Esperandim VR, Januário AH, Pauletti PM, Silva MLA, Cunha WR Unifran – Ciências Exatas e Tecnológicas

**09.004** Possible participation of prostaglandins in gastroprotection of ethyl acetate fraction of *Neoglaziovia variegata* (Arruda) Mez. in rats and mice. Lopes KL<sup>1</sup>, Machado FDF<sup>1</sup>, Oliveira IS<sup>1</sup>, Silva-Freitas FV<sup>1</sup>, Lima GS<sup>1</sup>, Oliveira FA<sup>1</sup>, Almeida JRGS<sup>2</sup>, Oliveira RCM<sup>1</sup> – <sup>1</sup>NPPM-UFPI, <sup>2</sup>NEPLAME-UNIVASF

**09.005** Effects of *Tityus serrulatus* scorpion venom on endothelial cells. Rigoni VLS<sup>1,2</sup>, Vieira RP<sup>3</sup>, Silva JLV<sup>4</sup>, Zamuner SF<sup>4</sup>, Kwasniewski FH<sup>5</sup>, Zamuner SR<sup>1</sup> – <sup>1</sup>Uninove – Medicina, <sup>2</sup>Unifesp – Biofísica, <sup>3</sup>Uninove – Ciências da Reabilitação, <sup>4</sup>Uninove – Saúde, <sup>5</sup>UEL – Ciências Patológicas

**09.006** Neurotoxicity of acanthoscurria juvenicola spider venom in vertebrate neuromuscular preparations *in vitro*. de Moraes DS<sup>1</sup>, Sutti R<sup>2</sup>, Silva PI<sup>3</sup>, Bertani R<sup>4</sup>, Hyslop S<sup>1</sup>, Rodrigues-Simioni L<sup>1</sup>, Rocha-e-Silva TAA<sup>2</sup> – <sup>1</sup>Unicamp – Farmacologia, <sup>2</sup>FCMSCSP – Ciências Fisiológicas, <sup>3</sup>Ibu – Toxinologia aplicada, <sup>4</sup>Ibu – Ecologia e Evolução

**09.007** Effect of ethanolic extract from leaves of *Casearia sylvestris* SW. and its fraction rich in diterpenes on carrageenan-induced pleurisy in rats. Castro RC<sup>1</sup>, Carmo EGB<sup>2</sup>, Bosquesi CL<sup>3</sup>, Pierri EG<sup>1</sup>, Santos AG<sup>1</sup> – <sup>1</sup>FCF-Unesp- Araraquara – Princípios Ativos Naturais e Toxicologia, <sup>2</sup>UNIRP, <sup>3</sup>UNIFEV

**09.008 Red propolis attenuates ischemic-reperfusion acute kidney injury.** Costa MFB<sup>1</sup>, Meneses GC<sup>1</sup>, Lima DB<sup>1</sup>, Libório AB<sup>2</sup>, Martins AMC<sup>1</sup> <sup>1</sup>UFC – Fisiologia e Farmacologia, <sup>2</sup>UFC – Medicina Clínica

**09.009 Anti-inflammatory activity of anethole via reduction of macrophage-derived cytokines.** Ponte EL<sup>1</sup>, Martin TM<sup>1</sup>, Marques-Domingos GFO<sup>1</sup>, Murata GM<sup>2</sup>, Gorjão R<sup>3</sup>, Curi R<sup>2</sup>, Assreuy AMS<sup>1</sup> <sup>1</sup>ISCB-UECE, <sup>2</sup>ICB-USP, <sup>3</sup>ICAF-Uniclusul

**09.010 Quercetin improves antioxidant response in the gills of silver catfish.** Pês TS, Gressler LT, Saccol EH, Londero EP, Ourique GM, Baldisserotto B, Pavanato MA UFSM – Physiology and Pharmacology

**09.011 Vasorelaxation induced by synthetic derivative of the isoquinoline alkaloids in rat aorta is mediated by the endothelium.** Travassos RA<sup>1</sup>, Sarmento DM<sup>2</sup>, Nascimento GJ<sup>1</sup>, Albuquerque JSS<sup>1</sup>, Cordeiro MB<sup>2</sup>, Rodrigues LC<sup>1</sup>, Braga VA<sup>1</sup>, Araújo DAM<sup>1</sup> <sup>1</sup>CBiotec-UFPB, <sup>2</sup>CCS-UFPB

**09.012 Study of association of antibiotics with essential oil *Ocimum basilicum* or linalool on multiresistant bacteria.** Silva VA<sup>1</sup>, Freitas AFR<sup>1</sup>, Lima MA<sup>1</sup>, Pessôa HLF<sup>1</sup>, Sarmento FQ<sup>1</sup>, Coutinho HDM<sup>2</sup>, Coutinho HDM<sup>2</sup>, Sousa JP<sup>1</sup>, Lima EO<sup>1</sup> <sup>1</sup>UFPB, <sup>2</sup>URCA

**09.013 Effects of silymarin on oxidative stress parameters and monoamine oxidase activity.** Dotto MM<sup>1</sup>, Oliveira DR<sup>2</sup>, Schaffer LF<sup>3</sup>, Busanello A<sup>3</sup>, Peroza LR<sup>2</sup>, Barbosa CP<sup>1</sup>, Fachineto R<sup>4</sup> <sup>1</sup>UFSM – Farmácia, <sup>2</sup>UFSM – Bioquímica Toxicológica, <sup>3</sup>UFSM – Farmacologia, <sup>4</sup>UFSM –Bioquímica Toxicológica e Farmacologia

**09.014 Amides from *Piper* as a diuretic – behind the ethnopharmacological uses of *Piper glabratum* Kunth.** Prando TBL<sup>1</sup>, Baciquete TF<sup>1</sup>, Gasparotto FM<sup>1</sup>, Araújo V<sup>1</sup>, da Silva GR<sup>1</sup>, Lourenço ELB<sup>1</sup>, Gasparotto Júnior A<sup>2</sup> <sup>1</sup>Unipar – Farmacologia e

Toxicologia de Produtos Naturais, <sup>2</sup>UFGD – Farmacologia e Toxicologia de Produtos Naturais

**09.015 Ethno-guided investigation of the diuretic effects of native medicinal species.** Prando TBL<sup>1</sup>, Gasparotto FM<sup>1</sup>, Jacomassi E<sup>1</sup>, Quindere JR<sup>1</sup>, Barbosa LN<sup>2</sup>, Lourenço ELB<sup>1</sup>, Gasparotto Júnior A<sup>3</sup> <sup>1</sup>Unipar – Farmacologia e Toxicologia de Produtos Naturais, <sup>2</sup>UFPR – Farmacologia, <sup>3</sup>UFGD – Farmacologia e toxicologia de Produtos Naturais

**09.016 BPMP-II, a novel *Bothrops pauloensis* venom PI metalloproteinase: inhibition of endothelial cell adhesion and *in vitro* angiogenesis.** Achê DC<sup>1</sup>, Gomes MSR<sup>2</sup>, Naves-de-Souza DL<sup>1</sup>, Almeida-Silva M<sup>1</sup>, Homs-Brandeburgo MI<sup>1</sup>, Yoneyama KAG<sup>1</sup>, Rodrigues RS<sup>1</sup>, Borges MH<sup>3</sup>, Lopes DS<sup>1</sup>, Rodrigues VM<sup>1</sup> – <sup>1</sup>UFU – Genetics and Biochemistry, <sup>2</sup>UESB – Chemical and Physical, <sup>3</sup>FUNED

**09.017 Primitive ants *dinoponera quadricaps venoms* have neurotoxic and cardiotoxic actions dependent histamine release.** Cabral PHB<sup>1</sup>, Nascimento NRF<sup>2</sup>, Fonteles MC<sup>2</sup>, Santos CF<sup>2</sup>, Quinet YP<sup>2</sup>, Bindá AH<sup>1</sup>, Eleuterio EO<sup>2</sup> <sup>1</sup>UFC – Farmacologia, <sup>2</sup>ISCB-UECE

**09.018 Involvement of the nitric oxide in the vasorelaxant effect of the water soluble fraction of *Terminalia fagifolia* Mart. & Zucc. in rat aorta.** Carvalho EF<sup>1</sup>, Nunes AF<sup>1</sup>, Nunes PHM<sup>2</sup>, Santos RF<sup>1</sup>, Chaves MH<sup>3</sup>, Oliveira AP<sup>1</sup>, Oliveira RCM<sup>1</sup> <sup>1</sup>UFPI – Medicinal Plants, <sup>2</sup>UFPI – Biophysics and Physiology, <sup>3</sup>UFPI – Chemistry

**09.019 Prolonged diuretic activity and sparing-calcium effect of *Tropaeolum majus* L. – evidence in the prevention of osteoporosis.** Barboza LN<sup>1</sup>, Prando TBL<sup>2</sup>, Silva GR<sup>2</sup>, Lourenço ELB<sup>2</sup>, Gasparotto Júnior A<sup>3</sup> <sup>1</sup>UFPR – Farmacologia, <sup>2</sup>Unipar – Farmacologia e Toxicologia de Produtos Naturais, <sup>3</sup>UFGD – Farmacologia

**09.020 Effects of PhTx3-3 AND PhTx3-6 toxins obtained from the Brazilian spider *Phoneutria nigriventer* on glioma cells.**

Nicoletti NF<sup>1,2</sup>, Erig TC<sup>3</sup>, Campos MM<sup>1,2,4</sup>, Gomez MV<sup>5</sup>, Morrone FB<sup>1,2,3</sup> <sup>1</sup>INTOX-PUCRS, <sup>2</sup>PUCRS – Biologia Celular e Molecular, <sup>3</sup>PUCRS – Farmácia, <sup>4</sup>PUCRS – Odontologia, <sup>5</sup>UFMG – Neurociências

**09.021 Healing potential of the ointment *Jacaranda decurrens* Cham. in skin injury in mice.** Serra MB, Abreu IC, TORRES NA, Sodré TP, Silva SN, Rocha AO, Ferreira FS, Lima NFM, Borges MOR, Borges ACR UFMA – Farmacologia.

**09.022 *Cimicifuga racemosa* attenuates inflammatory osteolysis in a rat model of periodontitis.** Medeiros AC<sup>1</sup>, Oliveira JM<sup>2</sup>, Bastos BM<sup>1</sup>, Bastos JM<sup>3</sup>, Parente ATPP<sup>1</sup>, Filho SMP<sup>1</sup>, Teixeira AH<sup>2</sup>, Aguiar LMV<sup>1</sup>, Pereira KMA<sup>3</sup>, Benevides NBB<sup>4</sup>, Filho GC<sup>1</sup>, Pinto VPT<sup>7</sup>, Silva AAR<sup>3</sup>, Dutra PGP<sup>3</sup>, Brito GAC<sup>5</sup>, Chaves HV<sup>3</sup>, Bezerra MM<sup>1</sup> <sup>1</sup>UFC-Sobral – Medicine, <sup>2</sup>Renorbio-UFC, <sup>3</sup>UFC-Sobral – Dentistry, <sup>4</sup>UFC – Biochemistry and Molecular Biology, <sup>4</sup>UFC – Morphology

**09.023 Effects of McLTP1 from *Morinda citrifolia* (noni) in proteolytic activity by *Bothrops insularis*.** Lopes PL<sup>1</sup>, Marinho AD<sup>1</sup>, Alves NTQ<sup>1</sup>, Jorge RJB<sup>1</sup>, Silveira JAM<sup>1</sup>, Costa PHS<sup>1</sup>, Silva PLB<sup>1</sup>, Pimentel MD<sup>1</sup>, Vasconcelos MJS<sup>1</sup>, Oliveira HD<sup>2</sup>, Campos DCO<sup>2</sup>, Monteiro HSA<sup>1</sup> <sup>1</sup>UFC – Farmacologia e Fisiologia, <sup>2</sup>UFC – Bioquímica e Biologia Molecular

**09.024 Evaluation of acute toxicity of *Pedilanthus tithymaloides* (L.) Poit. in mice.** Moura APG<sup>1</sup>, Meireles DRP<sup>1</sup>, Fernandes HMB<sup>1</sup>, Xavier AL<sup>1</sup>, González TL, López V de la P, Tavares JF<sup>1</sup>, Silva MS<sup>1</sup>, Sobral MV<sup>1</sup> DCF-UFPB

**09.025 Antioxidant activity of pequi leaves.** Duavy SMP<sup>1</sup>, Seeger RL<sup>2</sup>, Ramos A<sup>2</sup>, Costa JGM<sup>1</sup>, Barbosa NBV<sup>2</sup> <sup>1</sup>URCA, <sup>2</sup>UFMS

**09.026 Evaluation of antidiarrheal and antispasmodic activities of total glycoalkaloids fraction from *Solanum crinitum* Lam. (Solanaceae).** Ferreira SRD<sup>1</sup>, Moreno GTA<sup>1</sup>, Oliveira FRMB<sup>1</sup>, Souza ILL<sup>2</sup>, Silva TMS<sup>3</sup>, Correia ACC<sup>4</sup>, Cavalcante FA<sup>5</sup> <sup>1</sup>UFPB, <sup>2</sup>UFPB, <sup>3</sup>DCM-UFRPE, <sup>4</sup>ICBS-UFAL, <sup>5</sup>DFP-UFPB

**09.027 Protective effects of *Euterpe oleracea* Mart. (An Amazon Plant) on experimental metabolic syndrome in C57/BL6 mice.** Costa CA<sup>1</sup>, Oliveira PRB<sup>1</sup>, Rocha APM<sup>2</sup>, Carvalho LCRM<sup>1</sup>, de Bem GF<sup>1</sup>, Santos IB<sup>1</sup>, Souza MAV<sup>1</sup>, Cunha PJ<sup>3</sup>, Soares de Moura R<sup>1</sup>, Resende AC<sup>1</sup> <sup>1</sup>UERJ, <sup>2</sup>UNIRIO, <sup>3</sup>UFPA

**09.028 Antidepressant-like effect of *Ilex paraguariensis* in rats.** Reis EM<sup>1</sup>, Neto FWS<sup>2</sup>, Cattani VB<sup>2</sup>, Peroza LR<sup>3</sup>, Busanello A<sup>1</sup>, Leal CQ<sup>4</sup>, Lehmen T<sup>4</sup>, Libardoni M<sup>4</sup>, Bressan GN<sup>4</sup>, Boligon AA<sup>5</sup>, Athayde ML<sup>5</sup>, Fachinetto R<sup>1,3</sup> <sup>1</sup>UFMS – Farmacologia, <sup>2</sup>UNICRUZ – Farmácia, <sup>3</sup>UFMS – Ciências Biológicas / Bioquímica Toxicológica, <sup>4</sup>UFMS – Farmácia, <sup>5</sup>UFMS – Farmácia Industrial

**09.029 Effect of low level laser (LLL) in the expression of myod and myogenin in myoblast differentiation submitted to *Bothrops jararacussu* snake venom (BjssuV).** Silva LMG<sup>1</sup>, Silva CAA<sup>2</sup>, Zamuner SF<sup>1</sup>, Cogo JC<sup>3</sup>, Zamuner SR<sup>1</sup> <sup>1</sup>Uninove – Medicina, <sup>2</sup>Uninove – Ciências da Reabilitação, <sup>3</sup>Univap – Fisiologia

**09.030 Essential oil from *Xylopia frutescens* Aubl. blocks Ca<sub>v</sub>1 and inhibits Ca<sup>2+</sup> mobilization to relax guinea pig ileum.** Souza ILL, Araujo LCC, Vasconcelos LHC, Silva MCC, Ferreira PB, Costa VCO, Tavares JF, Cavalcante FA, Silva BA UFPB

**09.031 Phytochemical characterization of green tea leaves (*Camellia sinensis* (L.) Kuntze).** Parente JM, Medeiros MAS UNIFOR

**09.032** Tocolytic effect of essential oil from *Lippia microphylla* Cham. involves positive modulation of K<sup>+</sup> channels on rat. Silva MCC, Vasconcelos LHC, Souza ILL, Araujo LCC, Ferreira PB, Sampaio RS, Tavares JF, Cavalcante FA, Silva BA UFPB

**09.033** Further evidence on the protective effects of P/Q- and N-type voltage-gated calcium channel blockers in the mouse model of cyclophosphamide-induced hemorrhagic cystitis. Silva RBM<sup>1</sup>, Sperotto NDM<sup>2</sup>, Pereira TCB<sup>1</sup>, Bogo MR<sup>3</sup>, Morrone FB<sup>2</sup>, Gomez MV<sup>4</sup>, Campos MM<sup>5</sup> <sup>1</sup>PUCRS – Medicine and Health Sciences, <sup>2</sup>PUCRS – Applied Pharmacology, <sup>3</sup>PUCRS – Genomics and Molecular Biology, <sup>4</sup>UFMG, <sup>5</sup>INTOX-PUCRS

**09.034** Effects of garcinielliptona FC on the locomotor activity of mice: preclinical study for the development of new drugs. Silva APSCL<sup>1</sup>, Oliveira GAL<sup>1</sup>, Medeiros SC<sup>1</sup>, Sousa GF<sup>2</sup>, Silva Filho JCCL<sup>3</sup>, Costa Júnior JS<sup>2</sup>, David JM<sup>4</sup>, Freitas RM<sup>1</sup> <sup>1</sup>UFPI, <sup>2</sup>IFPI, <sup>3</sup>UNOPAR, <sup>4</sup>UFBA

**09.035** Strength training changes aorta reactivity by modulating oxide nitric pathway on Wistar rat. Ferreira PB, Brito AF, Silva AS, Souza AA, Félix GS, Sampaio RS, Tavares RL, Souza ILL, Pereira RA, Araujo LCC, Miranda Neto M, Silva BA UFPB

**09.036** Study of neurotoxic effects of intrahippocampal injection of three isolated toxins from venom of the scorpion *Tityus bahiensis*. Freitas LA<sup>1</sup>, Kuniyoshi AK<sup>2</sup>, Carvalho DC<sup>2</sup>, Paulo MEFV<sup>1</sup>, Sobral ACM<sup>1</sup>, Portaro FCV<sup>2</sup>, Dorce VAC<sup>1</sup>, Nencioni ALA<sup>1</sup> <sup>1</sup>Ibu – Farmacologia, <sup>2</sup>Ibu – Imunoquímica

**09.037** Antiulcerogenic effect of riparin II on ethanol-induced gastric lesions in mice: role of prostaglandins, nitric oxide and KATP<sup>+</sup> channels. Carvalho AMR<sup>1</sup>, Vasconcelos LF<sup>1</sup>, Rocha NFM, Rios ERV, Dias ML<sup>1</sup>, Bastos MVR<sup>1</sup>, Vidal LMT<sup>1</sup>,

Barbosa Filho JM<sup>2</sup>, Gutierrez SJC<sup>3</sup>, Sousa FCF<sup>1</sup> <sup>1</sup>UFC – Physiology and Pharmacology, <sup>2</sup>UFPB – Pharmaceutics Technology, <sup>3</sup>UFPI – Biochemistry and Pharmacology

**09.038** Antinociceptive effect of Riparin III: Role of glutamate and mechanical hypernociception induced carrageenan. Vasconcelos LF<sup>1</sup>, Rocha NFM, Carvalho AMR<sup>1</sup>, Rios ERV, Dias ML<sup>1</sup>, Vidal LMT<sup>1</sup>, Costa FL<sup>1</sup>, Gutierrez SJC<sup>2</sup>, Barbosa Filho JM<sup>3</sup>, Sousa FCF<sup>1</sup> <sup>1</sup>UFC – Physiology and Pharmacology, <sup>2</sup>UFPI – Biochemistry and Pharmacology, <sup>3</sup>UFPB

**09.039** Relevance of C-terminal amidation of Ts1 on its modulation of voltage-gated sodium channels. Cremonese CM<sup>1</sup>, Peigneur S<sup>2</sup>, Waelkens E<sup>3</sup>, Tytgat J<sup>2</sup>, Arantes EC<sup>1</sup> <sup>1</sup>FCFRP-USP – Física e Química, <sup>2</sup>KU Leuven – Toxicology and Pharmacology, <sup>3</sup>KU Leuven – Protein Phosphorylation and Proteomics

**09.040** Antiproliferative activity of a new compound isolated from *Bauhinia acuruana*. Silva PBN<sup>1</sup>, Silva TG<sup>2</sup>, Gois RWS<sup>3</sup>, Santiago GMP<sup>3</sup>, Militão GCG<sup>1</sup> <sup>1</sup>UFPE – Fisiologia e Farmacologia, <sup>2</sup>UFPE – Antibióticos, <sup>3</sup>UFC – Farmácia

**09.041** Effects of polyanions on some activities of *Bothrops leucurus* venom. Cons BL<sup>1</sup>, Tomaz MA<sup>1</sup>, Ricardo HD<sup>1</sup>, Strauch MA<sup>2</sup>, Monteiro-Machado M<sup>1</sup>, Tavares-Henriques MS<sup>1</sup>, Cruz JMT<sup>1</sup>, Saturnino-Oliveira J<sup>3</sup>, Melo PA<sup>1</sup> <sup>1</sup>UFRJ – Farmacologia das Toxinas e Substâncias Antagonistas, <sup>2</sup>IVB, <sup>3</sup>UFS – Morfologia

**09.042** Trypanocidal effect of *Bothropoides insularis* venom. Canuto JA<sup>1</sup>, Bezerra GF<sup>1</sup>, Lima DB<sup>1</sup>, Mello CP<sup>1</sup>, Bandeira ICJ<sup>1</sup>, Pereira TP<sup>1</sup>, Tessarolo LD<sup>1</sup>, Menezes RRPPB<sup>2</sup>, Sampaio TL<sup>2</sup>, Toyama MH<sup>3</sup>, Martins AMC<sup>1</sup> <sup>1</sup>UFC – Clinical and Toxicological Analysis, <sup>2</sup>UFC – Physiology and Pharmacology, <sup>3</sup>UFC

**09.043** Antiobesity effect of *hancornia speciosa* gomes (Apocynaceae) in mice. Pereira AC<sup>1</sup>, Silva JF<sup>2</sup>, Pereira ABD<sup>3</sup>, Barbosa LCO<sup>1</sup>, Braga FC<sup>3</sup>, Lemos VS<sup>2</sup>, Côrtes SF<sup>1</sup> <sup>1</sup>ICB-UFMG – Farmacologia, <sup>2</sup>ICB-UFMG – Fisiologia e Biofísica, <sup>3</sup>UFMG – Farmácia

**09.044** Anti-inflammatory potencial of crotoxin: A natural inhibitor of functions and signaling pathways in bone marrow neutrophils. Neves CL<sup>1</sup>, Lima TS<sup>1</sup>, Sampaio SC<sup>1</sup>, Zambelli VO<sup>2</sup>, Cirillo MC<sup>1</sup> <sup>1</sup>IBu – Pathophysiology, <sup>2</sup>IBu – Pain and Signaling

**09.045** Crotoxin, a toxin from rattlesnake venom, inhibits the angiogenic function of macrophages in co-culture model. Pimenta LA, Pereira JF, Kato EE, Cirillo MC, Sampaio SC IBu – Pathophysiology

**09.046** Effects of prolonged administration of *Echinaceae purpurea* against acute and chronic infection with different strains (RH and ME-49) of *Toxoplasma gondii* in mice. Cosmo ML<sup>1</sup>, Lima DA<sup>2</sup>, Santos PS<sup>2</sup>, Lourenço ELB<sup>1</sup>, Gasparotto Júnior A<sup>3</sup> – <sup>1</sup>Unipar – Ciência Animal, <sup>2</sup>Unipar – Curso de Farmácia, <sup>3</sup>UFGD – Ciência Animal

**09.047** Crude venom from scorpion *Tityus bahiensis* is able to change offspring development when injected in female rats during lactation. Martins AN, Nencioni ALA, Fusco CBP, Frare EO, De Paulo MEJV, Dorce VAC IBu – Farmacologia

**09.048** Effect of lectin from *Abelmoschus esculentus* (Malvaceae) on free radicals and oxidative stress on ethanol-induced gastropathy in mice: involvement of alpha-2 adrenoceptor. Matos SO<sup>1</sup>, Ribeiro KA<sup>2</sup>, Maciel LM<sup>3</sup>, Pereira Filho SM<sup>3</sup>, Pinto IR<sup>2</sup>, Monteiro DAM<sup>1</sup>, Lacerda JTG<sup>4</sup>, Gadelha TS<sup>4</sup>, Gadelha CAA<sup>4</sup>, Chaves HV<sup>1,5</sup>, Aguiar LMV<sup>3,2</sup>, Pereira KMA<sup>1</sup>, Benevides NMB<sup>5</sup>, Pinto VPT<sup>3,2</sup>, Cristino Filho G<sup>3,2</sup>, Bezerra MM<sup>3,2</sup>, Silva AAR<sup>1,2</sup> <sup>1</sup>UFC – Dentistry, <sup>2</sup>UFC – Biotechnology, <sup>3</sup>UFC – Medicine, <sup>4</sup>UFPB –

Molecular Biology, <sup>5</sup>UFC – Biochemistry and Molecular Biology

**09.049** Cinnamaldehyde reduces the production of virulence factors in *Pseudomonas aeruginosa*. Ferro TAF<sup>1</sup>, dos Santos JS<sup>1</sup>, Pinto BLS<sup>1</sup>, Araujo JMM<sup>1</sup>, Souza EB<sup>1</sup>, Mendes SJ<sup>1</sup>, Figueiredo PMS<sup>1</sup>, Neto VM<sup>1</sup>, Fernandes ES<sup>1,2</sup> <sup>1</sup>Ceuma, <sup>2</sup>King's College – Cardiovascular Division

**09.050** A novel cytotoxic *ent*-kaurane diterpene from the stem bark of *Annona vepretorum* (Annonaceae). Dutra LM<sup>1</sup>, Bomfim LM<sup>2</sup>, Rocha SLA<sup>2</sup>, Nepel A<sup>3</sup>, Soares MBP<sup>2</sup>, Barison A<sup>3</sup>, Costa EV<sup>1</sup>, Bezerra DP<sup>2</sup> <sup>1</sup>UFS – Chemistry, <sup>2</sup>Fiocruz-Bahia – Tissue Engineering and Immunopharmacology, <sup>3</sup>UFPR – Chemistry

**09.051** Gastric ulcer healing promoted by hydroalcoholic extract and ethyl acetate fraction of green tea (*Camellia sinensis* (L.) Kuntze) in rats. Borato DG<sup>1</sup>, Scoparo CT<sup>2</sup>, Maria-Ferreira D<sup>1</sup>, da Silva LM<sup>1</sup>, Souza LM<sup>2</sup>, Iacomini M<sup>2</sup>, Werner MFP<sup>1</sup>, Baggio CH<sup>1</sup> <sup>1</sup>UFPR – Pharmacology, <sup>2</sup>UFPR – Biochemistry and Molecular Biology

**09.052** Antinociceptive effect of beta-caryophyllene in paclitaxel-induced peripheral neuropathy. Segat GC<sup>1</sup>, Costa R<sup>2</sup>, Manjavachi MN<sup>1</sup>, Setim C<sup>1</sup>, Calixto JB<sup>1</sup> <sup>1</sup>UFSC – Farmacologia, <sup>2</sup>UFRJ – Farmácia

## 10. Cancer and Cell Proliferation

**10.001** XIAP silencing and p53 superexpression cooperate in glioma cell death. Hütten MO, Silva AO, Lenz G UFRGS

**10.002** *In vitro* effects of the guaraná (*Paullinia cupana*) hydroalcoholic extract in association with different chemotherapeutics used in the treatment of breast cancer. Azzolin VF, Hertz E, Cadoná F, Machado AK, Barbisan F, Cruz IBM UFSM – Biogenômica

**10.003** Preliminary investigation of cytotoxic potential of semi-synthetic

**chalcone against human cancer cells.** Maranhão SS, Soares BM, Meira AS, Moraes MO, Cavalcanti BC, Pessoa CO UFC – Fisiologia e Farmacologia

**10.004 Antitumor effects of the mesoionic compound sydnone-1 in walker-256 carcinosarcoma model.** Galuppo LF<sup>1</sup>, Martins GG<sup>1</sup>, Lívero F<sup>1</sup>, Cadena SMSCC<sup>2</sup>, Beltrame OC<sup>3</sup>, Dittrich RL<sup>3</sup>, Echevarria A<sup>4</sup>, Acco A<sup>1</sup> <sup>1</sup>UFPR – Pharmacology, <sup>2</sup>UFPR – Biochemistry and Molecular Biology, <sup>3</sup>UFPR – Veterinary Medicine, <sup>4</sup>UFRJ – Chemistry

**10.005 In vitro evaluation of a novel series of quinoxaline-derived chalcones in oral squamous cell carcinoma: relevance of a-ring methoxylation.** Mielcke TR<sup>1</sup>, Erig TC<sup>2</sup>, Mascarello A<sup>3</sup>, Chiaradia LD<sup>3</sup>, Nunes RJ<sup>3</sup>, Campos MM<sup>4</sup> <sup>1</sup>PUCRS – Medicine and Health Sciences, <sup>2</sup>PUCRS – Pharmacy, <sup>3</sup>UFSC – Chemistry, <sup>4</sup>INTOX-PUCRS – Medicine and Health Sciences

**10.006 Inhibition of proliferation due to cell cycle arrest caused by sublethal concentrations of extract and fraction from *Casearia sylvestris* (Salicaceae).** Felipe KB<sup>1</sup>, Kwiecinski MR<sup>1</sup>, Ourique F<sup>1</sup>, Buckner NF<sup>1</sup>, Farias MS<sup>1</sup>, Grinivicius VMAS<sup>1</sup>, Gatti FM<sup>2</sup>, Rossi MH<sup>2</sup>, Castro LSEPW<sup>1</sup>, Pedrosa RC<sup>1</sup>, Mota NS<sup>1</sup> <sup>1</sup>UFSC – Bioquímica, <sup>2</sup>CPDSA-Instituto Biológico

**10.007 Comparative analysis of toxicological parameters in mice with melanoma treated and untreated with cisplatin.** Ferreira NH, Furtado RA, Oliveira PF, Acésio NO, Souza LDR, Magalhães GM, Nassar EJ, Tavares DC Unifran

**10.008 Cytotoxic action of secretions from Amazon amphibians.** Machado KC<sup>1</sup>, Lima DJB<sup>2</sup>, Debiassi BW<sup>3</sup>, Oliveira SFC<sup>1</sup>, Machado KC<sup>1</sup>, Noronha JC<sup>3</sup>, Rodrigues DJ<sup>3</sup>, Sinhorin AP<sup>3</sup>, Pessoa C<sup>2</sup>, Vieira-Júnior GM<sup>3</sup>, Ferreira PMP<sup>1</sup> <sup>1</sup>UFPI, <sup>2</sup>UFC, <sup>3</sup>UFMT

**10.009 Cytotoxic activity of lapachol analogues on HL60 with or without**

**antioxidant co-treatment.** Costa AM<sup>1</sup>, Gomes SLS<sup>2</sup>, Costa PRR<sup>2</sup>, Silva AJM<sup>3</sup>, Costa-Lotufo LV<sup>1</sup>, Pessoa CO<sup>1</sup>, Moraes MO<sup>1</sup>, Militão GCG<sup>4</sup> <sup>1</sup>UFC – Fisiologia e Farmacologia, <sup>2</sup>CCS-UFRJ – Química Bioorgânica, <sup>3</sup>CCS-UFRJ – Catálise Orgânica, <sup>4</sup>UFPE – Fisiologia e Farmacologia

**10.010 Genetic profile analysis and in vitro drug sensibility from primary culture obtained from glioblastoma.** Kipper FC<sup>1</sup>, Becker R<sup>1</sup>, Mendonça LC<sup>1</sup>, Vanacôr CN<sup>2</sup>, Confortin G<sup>2</sup>, Marc A<sup>2</sup>, Paglioli-Neto E<sup>2</sup>, Morrone FB<sup>3</sup>, Lenz G<sup>1</sup> <sup>1</sup>UFRGS – Biofísica e Centro de Biotecnologia, <sup>2</sup>HSL-PUCRS – Neurocirurgia, <sup>3</sup>PUCRS – Farmácia

**10.011 Role of GSK3-β signaling on telocinobufagin-induced cell death.** Amaral LS, Cunha-Filho GA, Noël F, Quintas LEM ICB-UFRJ

**10.012 C-terminus of protein S100A9 inhibits adhesion, proliferation and migration of endothelial cell on extracellular matrix components.** Moraes NF<sup>1</sup>, Melo RL<sup>2</sup>, Sampaio SC<sup>1</sup>, Giorgi R<sup>1</sup> <sup>1</sup>IBu – Fisiopatologia, <sup>2</sup>IBu – Proteômica Funcional

**10.013 Bioprospecting anticancer compounds from the octocoral *Stragulum bicolor* (Anthozoa, Subclass: Octocorallia) on the Ceará coast.** Santos EA<sup>1</sup>, Jimenez PC<sup>2</sup>, Torres MCM<sup>1</sup>, Gomes BA<sup>1</sup>, Sousa TS<sup>1</sup>, Pessoa ODL<sup>1</sup>, Cutignano A<sup>3</sup>, Nuzzo G<sup>3</sup>, Fontana A<sup>3</sup>, Costa-Lotufo LV<sup>1</sup> <sup>1</sup>UFC, <sup>2</sup>Unifesp, <sup>3</sup>CNR-Italia

**10.014 Evaluation of the toxicity of the association of cerium oxide and zinc oxide nanoparticles after nine days of treatment.** Batista TM<sup>1</sup>, Xavier A<sup>1</sup>, Brito MT<sup>1</sup>, Sousa TKG<sup>1</sup>, Manguera VM<sup>1</sup>, Beltrão DM<sup>1</sup>, Moura APG<sup>1</sup>, Santos CCL<sup>2</sup>, Keyson D<sup>2</sup>, Souza AG<sup>2</sup>, Farias IAP<sup>3</sup>, Sampaio FC<sup>3</sup>, Albuquerque AJR<sup>3</sup>, Sobral MV<sup>1</sup> <sup>1</sup>UFPB – Ciências Farmacêuticas, <sup>2</sup>UFPB – Química, <sup>3</sup>UFPB – Biotecnologia

**10.015 Screening of antitumor activity of the synthetic piperinic derivatives in Ehrlich ascites carcinoma model.** Sousa TKG<sup>1</sup>, Manguiera VM<sup>1</sup>, Batista TM<sup>1</sup>, Fernandes HMB<sup>1</sup>, Meireles DRP<sup>1</sup>, Guimarães ARBV<sup>1</sup>, Souza HDS<sup>2</sup>, Lira BF<sup>2</sup>, Filho PFA<sup>2</sup>, Sobral MV<sup>1</sup> <sup>1</sup>UFPB – Ciências Farmacêuticas, <sup>2</sup>UFPB – Química

01. Cellular and Molecular Pharmacology

**01.010 Evaluation of cytotoxicity and expression of genes after human melanoma cells treatment with biflorin.**

Ralph ACL<sup>1</sup>, Souza LGSS<sup>2</sup>, Lemos TLG<sup>2</sup>, Montenegro RC<sup>3</sup>, Smith MC<sup>4</sup>, Calcagno DQ<sup>5</sup>, Vasconcellos MC<sup>1</sup> <sup>1</sup>UFAM – Pharmaceutical Sciences, <sup>2</sup>UFC – Organic and Inorganic Chemistry, <sup>3</sup>ICB-UFPA – <sup>4</sup>Unifesp – Morphology and Genetic, <sup>5</sup>UFPA – Oncology

**01.017 Report of a novel GPCR signaling pathway: Evidences from site-directed mutagenesis at the angiotensin II AT1 receptor.** Parreiras-e-Silva LT<sup>1</sup>, Reis RI<sup>1</sup>, Duarte DA<sup>1</sup>, Prando EC<sup>1</sup>, Maria AG<sup>1</sup>, Santos GA<sup>1</sup>, Beaurtrait A<sup>2</sup>, Oliveira EB<sup>1</sup>, Schertler GF<sup>3</sup>, Deupi X<sup>3</sup>, Bouvier M<sup>2</sup>, Costa-Neto CM<sup>1</sup> <sup>1</sup>FMRP-USP – Biochemistry and Immunology, <sup>2</sup>UdeM – Immunology and Cancer, <sup>3</sup>PSI – Biomolecular Research

**01.018 Study of monastrol-kinesin interactions by quantum biochemistry calculations.** Bezerra EM<sup>1</sup>, Diniz-Filho J<sup>2</sup>, Pessoa CO<sup>2</sup>, Meira AS<sup>2</sup>, Freire VN<sup>3</sup>, Costa RF<sup>4</sup> <sup>1</sup>UFC – Análise Clínica e Toxicologia, <sup>2</sup>UFC – Fisiologia e Farmacologia, <sup>3</sup>UFC – Física, <sup>4</sup>UFERSA – Física

**01.019 SRC-MAP kinase pathway activation by bufalin promotes epithelial to mesenchymal transition in LLC-PK1 cells.** Martins-Ferreira J, Cunha-Filho G, Quintas LEM, Noël F ICB-UFRJ

**01.020 Role of prostaglandin D<sub>2</sub> and their receptors in immunomodulatory functions of eosinophils.** Luna-Gomes T<sup>1</sup>, Bozza PT<sup>2</sup>, Bandeira-Melo C<sup>1</sup> <sup>1</sup>IBCCF-UFRJ, <sup>2</sup>IOC-Fiocruz

**01.021 Trypanocidal effect *Dinoponera quadricaps* venom.** Lima DB<sup>1</sup>, Mello CP<sup>1</sup>, Tessarolo LD<sup>1</sup>, Menezes RRPB<sup>2</sup>, Torres AFC<sup>1</sup>, Pereira TP<sup>1</sup>, Bandeira ICJ<sup>1</sup>, Sampaio

TL<sup>1</sup>, Costa MFB<sup>2</sup>, Fernandes LC<sup>1</sup>, Quinet YP<sup>3</sup>, Martins AMC<sup>1</sup> <sup>1</sup>UFC – Clinical and Toxicological Analysis, College of Pharmacy, <sup>2</sup>UFC – Physiology and Pharmacology, <sup>3</sup>ICB-UECE

**01.022 The absence of 5-lipoxygenase impairs alveolar bone loss in an experimental periodontal disease by *Aggregatibacter actinomycetemcomitans*.**

Madeira MFM<sup>1</sup>, Queiroz-Júnior CM, Correa JD<sup>2</sup>, Machado FS<sup>3</sup>, Soriani FM<sup>4</sup>, Cunha TM<sup>5</sup>, Garlet GP<sup>6</sup>, Teixeira MM<sup>7</sup>, Silva TA<sup>2</sup>, Souza DG<sup>8</sup> <sup>1</sup>UFMG – Patologia Oral/Microbiologia, <sup>2</sup>UFMG – Patologia oral, <sup>3</sup>UFMG – Bioquímica, <sup>4</sup>UFMG – Genética/Imunofarmacologia, <sup>5</sup>USP – Farmacologia, <sup>6</sup>USP – Ciências Biológicas, <sup>7</sup>UFMG – Bioquímica/Imunofarmacologia, <sup>8</sup>UFMG – Microbiologia

**01.023 Evaluation of the effects of lectins in pancreatic acinar cells stimulated by bile salts and alcohol: involvement of cell death.** Pantoja PS<sup>1</sup>, Damasceno SRB<sup>2</sup>, Franco AX<sup>2</sup>, Morais CM<sup>2</sup>, Girao DKFB<sup>2</sup>, Oliveira TB<sup>2</sup>, Mendes TS<sup>2</sup>, Lima FRF<sup>2</sup>, Mendonça VA<sup>1</sup>, Silva KES<sup>1</sup>, Lima MAS<sup>1</sup>, Souza MHL<sup>2</sup>, Soares PMG<sup>2</sup> <sup>1</sup>UFC – Biomedical Sciences, <sup>2</sup>UFC – Physiology and Pharmacology

**01.024 Zymosan promotes NLRP3/ASC/Capsase-1 inflammasome activation by a phagocytosis-independent mechanism.** Silva RL<sup>1</sup>, Lopes AHP<sup>1</sup>, Zamboni DS<sup>2</sup>, Cunha FQ<sup>1</sup>, Cunha TM<sup>1</sup> – <sup>1</sup>FMRP-USP – Pharmacology, <sup>2</sup>FMRP-USP – Cell Biology

**01.025 Cardiovascular effects *in vitro* of a selective and potent agonist for the BK potassium channel** França PL<sup>1</sup>, Barengo TS<sup>1</sup>, Maciel L<sup>2</sup>, Nascimento JH<sup>2</sup>, Bendhack LM<sup>3</sup>, Suarez-Kurtz G<sup>4</sup>, Ponte CG<sup>1</sup> <sup>1</sup>NCB-IFRJ, <sup>2</sup>IBCCF-UFRJ – Eletrofisiologia



Cardíaca, <sup>3</sup>FCFRP-USP – Farmacologia, <sup>4</sup>InCA – Farmacologia

**01.026** Antioxidant activity of novel derivative of ferulic acid on *Saccharomyces cerevisiae* model. Rêgo SC<sup>1</sup>, Taimo MRD<sup>2</sup>, Gomes Júnior AL<sup>2</sup>, Mata AMOF<sup>1</sup>, Alencar MVOB<sup>2</sup>, Araruna Júnior AA<sup>3</sup>, Santos JSB<sup>1</sup>, Freitas RM<sup>2</sup>, Cavalcante AACM<sup>2</sup> <sup>1</sup>UNINOVAFAP, <sup>2</sup>UFPI, <sup>3</sup>FSA

**01.027** Extracellular cAMP induces contraction of airway smooth muscle via adenosine formation and activation of adenosine receptors. Pacini ESA, Godinho RO Unifesp-EPM – Farmacologia

**01.028** Cyclic AMP – adenosine pathway modulates skeletal muscle contraction induced by electrical stimulation of peripheral nerve. Duarte T<sup>1</sup>, Godinho R O<sup>1</sup> <sup>1</sup>Unifesp-EPM – Farmacologia

**01.029** Chronic treatment with fluoxetine modulates vascular sympathetic responses by mechanisms that involve inhibition of norepinephrine synthesis/reuptake and increased nitric oxide generation. Pereira CA<sup>1</sup>, Ruginsk SG<sup>2</sup>, Mestriner FLAC<sup>1</sup>, Antunes-Rodrigues J<sup>2</sup>, Resstel LB<sup>1</sup>, Tostes RC<sup>1</sup> <sup>1</sup>FMRP-USP – Farmacologia, <sup>2</sup>FMRP-USP – Fisiologia

**01.030** The role of TLRs and NLRs in carrageenan-induced TNF $\alpha$  and IL-1 $\beta$  production by macrophage. Lopes AHP<sup>1</sup>, Silva RL<sup>1</sup>, Talbot J<sup>1</sup>, Cunha FQ<sup>1</sup>, Zamboni DS<sup>2</sup>, Couillin I<sup>3</sup>, Ryffel R<sup>3</sup>, Cunha TM<sup>1</sup> <sup>1</sup>FMRP-USP – Farmacologia, <sup>2</sup>FMRP-USP – Biocel, <sup>3</sup>CNRS – Immunologie et Neurogénétique Expérimentales et Moléculaires

**01.031** Investigation of antitumoral effect of new pyrimidobenzimidazoles in human melanoma cell lines. Azevedo JG<sup>1</sup>, Amaral SS<sup>1</sup>, Maria-Engler SS<sup>2</sup>, Lenz G<sup>3</sup>, Wink MR<sup>1</sup> <sup>1</sup>UFCSA, <sup>2</sup>USP, <sup>3</sup>UFRGS

## 02. Neuropharmacology

**02.021** Resveratrol inhibits monoamine oxidase A and B *in vitro*. Barbosa CP<sup>1</sup>, Busanello A<sup>2</sup>, Freitas CM<sup>3</sup>, Reinheimer JB<sup>1</sup>, Barbosa NBV<sup>3</sup>, Fachineto R<sup>2,3</sup> <sup>1</sup>UFMS – Farmácia, <sup>2</sup>UFMS – Farmacologia, <sup>3</sup>UFMS – Bioquímica Toxicológica

**02.022** Reserpine effects on dopaminergic neurons morphology. Reckziegel P<sup>1</sup>, Aschner M<sup>2</sup>, Fachineto R<sup>3</sup> <sup>1</sup>UFMS – Farmacologia, <sup>2</sup>Albert Einstein College – Molecular Pharmacology, <sup>3</sup>UFMS – Fisiologia e Farmacologia

**02.023** Pharmacological evaluation of a newly synthesized piperazine derivative-LQFM104 with antidepressant activity. Rodrigues ORL<sup>1</sup>, Galdino PM<sup>2</sup>, Menegatti R<sup>3</sup>, Costa EA<sup>1</sup> <sup>1</sup>ICB-UFG – Ciências Fisiológicas, <sup>2</sup>UFSC – Farmacologia, <sup>3</sup>UFG – Farmácia

**02.024** Influence of trans fat supplementation crossover two generations of rats on an amphetamine-induced mania-animal model. Roversi Kr<sup>1</sup>, Trevizol F<sup>2</sup>, Dias VT<sup>1</sup>, Burger ME<sup>2</sup> <sup>1</sup>UFMS – Farmácia, CCS, <sup>2</sup>UFMS – Farmacologia

**02.025** Screening effects of reserpine in *Caenorhabditis elegans*. Ferrari MC<sup>1</sup>, Reckziegel P<sup>2</sup>, Aschner M<sup>3</sup>, Fachineto R<sup>2,4</sup> <sup>1</sup>UFMS – Curso de Farmácia, Centro de Ciências da Saúde, <sup>2</sup>UFMS – Farmacologia, <sup>3</sup>Albert Einstein – Molecular Pharmacology, <sup>4</sup>UFMS – Fisiologia e Farmacologia

**02.026** Na<sup>+</sup>, K<sup>+</sup>-ATPase activator delays pentylenetetrazol-induced myoclonic seizures in a mice model of temporal lobe epilepsy. de Souza TL<sup>1</sup>, Funck VR<sup>1</sup>, de Oliveira CV<sup>1</sup>, Grauncke ACB<sup>1</sup>, Grigoletto J<sup>1</sup>, Larrick JW<sup>2</sup>, Ribeiro LR<sup>1</sup>, Furian AF<sup>3</sup>, Oliveira MS<sup>1</sup> <sup>1</sup>UFMS – Physiology and Pharmacology, <sup>2</sup>Panorama Research, <sup>3</sup>UFMS – Food Science and Technology

**02.027 Increased nitration and alterations of Na<sup>+</sup>,K<sup>+</sup>-ATPase activity in a mice model of temporal lobe epilepsy.** Grauncke ACB<sup>1</sup>, Funck VR<sup>1,2</sup>, de Oliveira CV<sup>1,2</sup>, de Souza TL<sup>1</sup>, Grigoletto J<sup>1</sup>, Ribeiro LR<sup>1,2</sup>, Furian AF<sup>1,2,3</sup>, Oliveira MS<sup>1,2</sup> <sup>1</sup>UFMS – Physiology and Pharmacology, <sup>2</sup>UFMS – Pharmacology, <sup>3</sup>UFMS – Department of Food Science and Technology

**02.028 *In vitro* modulation of neuromuscular transmission induced by riluzole.** Rangel DL<sup>1</sup>, Luchó AP<sup>1</sup>, Perin AP<sup>1</sup>, Porciúncula L<sup>2</sup>, Rocha-e-Silva TAA<sup>3</sup>, Rodrigues-Simioni L<sup>4</sup>, Dal Belo CA<sup>1</sup>, Vinade L<sup>1</sup> <sup>1</sup>Unipampa, <sup>2</sup>UFRGS, <sup>3</sup>FCMSCSP, <sup>4</sup>Unicamp

**02.029 Cognitive and emotional benefits of simvastatin and pravastatin in an animal model of Parkinson's disease.** Schamne MG<sup>1</sup>, dos Santos AFC<sup>2</sup>, Latyki C<sup>2</sup>, Ferro MM<sup>3</sup>, Moretti M<sup>1</sup>, Prediger RD<sup>1</sup>, Miyoshi E<sup>2</sup> <sup>1</sup>LEXDON-UFSC – Farmacologia, <sup>2</sup>UEPG – Ciências Farmacêuticas, <sup>3</sup>UEPG – Biologia Geral

**02.030 Neuromuscular activity of Jack Bean Urease (JBU) on the nervous system of the cockroach *Nauphoeta cinerea*.** Freitas TC<sup>1</sup>, Perin AP<sup>2</sup>, de Almeida CGM<sup>2</sup>, Heberle MA<sup>2</sup>, Breda RV<sup>3</sup>, Salamoni SD<sup>3</sup>, Dal Belo CA<sup>2</sup>, da Costa JC<sup>3</sup>, Carlini CR<sup>1</sup> <sup>1</sup>UFRGS – Biofísica, <sup>2</sup>LANETOX/Unipampa, <sup>3</sup>InsCer-PUCRS

**02.031 Determination of amino-peptidergic striatum after the use of 6-styryl-2-pyrone the model convulsion by bicuculline.** Nonato DTT<sup>1</sup>, Nascimento FL<sup>1</sup>, Maia MLCL<sup>1</sup>, Aragão GF<sup>1</sup>, Filho JMB<sup>2</sup>, Vasconcelos SMM<sup>3</sup>, Chaves EMC<sup>1</sup> – <sup>1</sup>ISCB-UECE, <sup>2</sup>UFPB – Tecnologia Farmacêutica, <sup>3</sup>UFC – Farmacologia

**02.032 Nociceptive threshold by combined use of alcohol and tobacco smoke in rats.** Bandeira S<sup>1</sup>, Nunes EA<sup>1</sup>, Santos CF<sup>2</sup>, Pulcinelli R<sup>2</sup>, Schneider R<sup>3</sup>, Torres ILS<sup>1,2</sup>

Gomez R<sup>1,2,3</sup> <sup>1</sup>UFRGS – Fisiologia, <sup>2</sup>UFRGS – Farmacologia, <sup>3</sup>UFRGS – Neurociências

**02.033 From blood to brain: Can graphene oxide nanoparticle cross the blood-brain barrier?** Mendonça MCP<sup>1</sup>, Soares ES<sup>2</sup>, Ceraglioli H<sup>3</sup>, Ferreira M<sup>4</sup>, Catharino R<sup>4</sup>, Cruz-Höfling MA<sup>5</sup> <sup>1</sup>Unicamp – Pharmacology, <sup>2</sup>Unicamp – Biochemistry and Tissue Biology, <sup>3</sup>Unicamp – Semiconductors, Instruments and Photonics, <sup>4</sup>Unicamp – Medicine and Experimental Surgery, <sup>5</sup>Unicamp – Pharmacology

**02.034 Effects of Atorvastatin (Citalor®) on the behavioral sequelae after chronic cerebral hypoperfusion in middle-aged rats.** Zaghi GGD, Godinho J, Ferreira EDF, Oliveira RMW, Milani H UEM

**02.035 *Hoodia gordonii*. Involvement with monoamine system.** Citó MCO<sup>1</sup>, Santos LKX<sup>1</sup>, Fernandes ML, Melo FHC, Silva MIG, Sousa FCF <sup>1</sup>UFC – Fisiologia e Farmacologia

**02.036 Antipsychotic and antidepressant-like effects of Riparin I in the corticosterone-induced depression model in mice.** Oliveira ICM<sup>1</sup>, Vasconcelos AV, Vidal LMT, Castro LA, Lopes IS, Rodrigues GC, Lima AEL, Sousa PB, Pontes MCD, Sousa FCF UFC – Physiology and Pharmacology

**02.037 Catecholaminergic inputs to the retrotrapezoid nucleus.** Oliveira LM<sup>1</sup>, Moreira TS<sup>2</sup>, Takakura AC<sup>1</sup> <sup>1</sup>USP – Farmacologia, <sup>2</sup>USP – Fisiologia

**02.038 Trans fat supplementation crossover two generations modifies lipid profile in brain areas and predisposes to amphetamine preference.** Kuhn FT, Bürger ME, Roversi Kr, Schuster AJ, Metz VG, Rosa HZ UFSM – Fisiologia e Farmacologia

**02.039** Infusion of neuropeptide Y into dorsal hippocampus disrupts the memory reconsolidation for contextual fear conditioning. Linartevichi VF, Lima TCM UFSC – Farmacologia

**02.040** Potential anxiolytic-like effect of riparin I in corticosterone-induced depression model in mice. Vidal LMT, Oliveira ICM, Vasconcelos AS, Castro LA, Rodrigues GC, Alencar RN, Lima AEL, Sousa FCF UFC – Fisiologia e Farmacologia

#### 04. Inflammation

**04.042** *In vivo* assays of ibuprofen intercalated in layered double hydroxide carrier. Lima AB<sup>1</sup>, Dias D<sup>1</sup>, Anicete M<sup>2</sup>, Nascimento JLM<sup>3</sup>, Bastos GNT<sup>1</sup> <sup>1</sup>UFPA – Neuroinflamação, <sup>2</sup>UFPA – Planejamento e Desenvolvimento de Fármacos, <sup>3</sup>UFPA – Neuroquímica Molecular e Celular

**04.043** Evaluation of 15-deoxy-delta-12,14 Prostaglandin J<sub>2</sub> treatment on asthma changes triggered by house dust mite in A/J mice. Coutinho DS<sup>1</sup>, Anjos-Valotta EA<sup>2</sup>, Silva PMR<sup>1</sup>, Martins MA<sup>1</sup> <sup>1</sup>IOC-Fiocruz – Inflamação, <sup>2</sup>UEZO

**04.044** Immunomodulatory effect of low-intensity exercise after traumatic injury of the sciatic nerve in mice. Bobinski F<sup>1</sup>, Teixeira JM<sup>2</sup>, Sluka KA<sup>3</sup>, Santos ARS<sup>1</sup> – <sup>1</sup>UFSC – Neurobiology of Pain and Inflammation, <sup>2</sup>Unicamp – Structural and Functional Biology, <sup>3</sup>UIOWA –Physical Therapy and Rehabilitation Science

**04.045** Thymol isolated of *Thymus vulgaris* essential oil inhibit *in vivo* leukocyte behavior during acute inflammatory response. Aguiar RP<sup>1</sup>, Bastos RL<sup>1</sup>, Silva-Comar FMS<sup>1</sup>, Silva-Filho SE<sup>1</sup>, Wiirzler LAM<sup>1</sup>, Rocha BA<sup>1</sup>, Ames FQ<sup>1</sup>, Bersani-Amado CA<sup>1</sup>, Cuman RKN<sup>1</sup> <sup>1</sup>UEM – Farmacologia e Terapêutica

**04.046** The role of D6 receptor in pulmonary fungal infections: Insights in

chemokine signalling in a model of aspergillosis. Moura TR<sup>1</sup>, Machado ALC<sup>1</sup>, Sucupira PHF<sup>1</sup>, Rachid MA<sup>2</sup>, Teixeira MM<sup>3</sup>, Russo RC<sup>4</sup>, Soriani FM<sup>1</sup> <sup>1</sup>UFMG – Biologia Geral, <sup>2</sup>UFMG – Patologia, <sup>3</sup>UFMG – Bioquímica e Imunologia, <sup>4</sup>UFMG – Fisiologia

**04.047** Staphylococcal enterotoxin type A (SEA) and B (SEB) exhibits an inhibitory effect on mice bone marrow neutrophils adhesion *in vitro*. Ferreira Duarte AP<sup>1</sup>, Pinheiro Torres AS<sup>1</sup>, De Souza IA<sup>1</sup>, Mello GC<sup>2</sup>, Antunes E<sup>2</sup>, Anhô F G<sup>2</sup> <sup>1</sup>FMJ – Biologia e Fisiologia, <sup>2</sup>Unicamp – Farmacologia

**04.048** Closed-spring placement promotes induced tooth movement with maximum at fourth day. Araújo VMA<sup>1</sup>, Soares KA<sup>2</sup>, Melo IM<sup>3</sup>, Guimarães MV<sup>3</sup>, Calcia TBB<sup>1</sup>, Kurita BM<sup>3</sup>, Lima V<sup>1</sup> <sup>1</sup>UFC – Physiology and Pharmacology, <sup>2</sup>UFC / UFRJ – Morphology, <sup>3</sup>UFC –Pharmacy, Dentistry and Nursing

**04.049** Protective effect of rutin on experimental acute pancreatitis in mice. Abreu FA<sup>1</sup>, Santana MS<sup>1</sup>, Souza ACA<sup>1</sup>, Oliveira JP<sup>1</sup>, Teixeira SA<sup>2</sup>, Muscará M<sup>2</sup>, Costa SKP<sup>2</sup>, Camargo EA<sup>1</sup> <sup>1</sup>UFS – Physiology, <sup>2</sup>ICB-USP

**04.050** Friedelin attenuates allergic airway inflammation in allergen-induced mouse asthma. Ferro JNS, Aquino FLT, Silva JPN, Santos SL, Conserva LM, Barreto EO UFAL

**04.051** Free heme activates mice mesothelial cells: role of NADPHox in inflammatory response. Candea ALP<sup>1</sup>, Simões RL<sup>2</sup>, Vergara FMF<sup>1</sup>, Pereira-Ribeiro C<sup>2</sup>, Arruda MA<sup>2</sup>, Barja-Fidalgo TC<sup>2</sup>, Henriques MGMO<sup>1</sup> <sup>1</sup>Farmanguinhos-Fiocruz – Farmacologia Aplicada, <sup>2</sup>UERJ – Farmacologia Celular e Molecular

**04.052** The role of *Aspergillus fumigatus* phosphatase-calcieneurin in the modulation of immune response in a model of

**aspergillosis.** Machado ALC<sup>1</sup>, Rocha WV<sup>1</sup>, Moura TR<sup>1</sup>, Teixeira MM<sup>2</sup>, Rachid MA<sup>3</sup>, Soriani FM<sup>1</sup> <sup>1</sup>UFMG – Biologia Geral, <sup>2</sup>UFMG – Bioquímica e Imunologia, <sup>3</sup>UFMG – Patologia

**04.053 Effect anti-inflammatory of crude extract *Cecropia obtusa* in a rheumatoid arthritis model in mice.** Beck VR<sup>1</sup>, Fiuza TL<sup>2</sup>, Hamann F<sup>3</sup>, Rigo F<sup>4</sup>, Rubin M<sup>2</sup>, Sauzem PD<sup>5</sup> <sup>1</sup>UFMG – Farmacologia, <sup>2</sup>UFMG – Bioquímica Toxicológica, <sup>3</sup>UFMG – Farmácia, <sup>4</sup>Santa Casa BH, <sup>5</sup>Unipampa

**04.054 Dyspeptic symptoms, gastric emptying, ghrelin and leptin serum levels in inflammatory bowel diseases patients.** Sales KMO<sup>1</sup>, Cavalcanti RF<sup>1</sup>, Santos AA<sup>1</sup>, Braga LLBCB<sup>1</sup>, Oliveira RB<sup>3</sup>, Castro M<sup>2</sup>, Souza MHL<sup>1</sup> <sup>1</sup>UFC – Physiology and Pharmacology, <sup>2</sup>FMRP-USP

**04.055 Plasmin induces macrophage recruitment and reprogramming.** Ribeiro ALC<sup>1</sup>, Carmo AAF<sup>2</sup>, Costa BRC<sup>1</sup>, Vago JP<sup>2</sup>, Garcia CC<sup>3</sup>, Teixeira MM<sup>3</sup>, Sousa LP<sup>1</sup> <sup>1</sup>UFMG – Análises Clínicas e Toxicológicas, <sup>2</sup>UFMG – Biologia Celular, <sup>3</sup>UFMG – Bioquímica e Imunologia

**04.056 Anti-inflammatory effects of cinnamaldehyde treatment in sepsis.** Mendes SJF<sup>1</sup>, Sousa FIAB<sup>1</sup>, Ferro TAF<sup>1</sup>, Silva BLR<sup>1</sup>, Pereira ICP<sup>1</sup>, Falcai A<sup>1</sup>, Grisotto MAG<sup>1</sup>, Brain SD<sup>2</sup>, Fernandes ES<sup>1,2</sup> <sup>1</sup>Ceuma, <sup>2</sup>King's College

**04.058 *Matricaria recutita* reduces ligature-induced alveolar bone loss via TNF-alpha inhibition.** Lassance Cunha E, Guimarães MV, Melo IM, Araujo VMA, Wong DVT, Ribeiro RA, Brasil T, Lima V <sup>1</sup>UFC – Fisiologia e Farmacologia

**04.059 Suppression by the flavonol quercetin of chronic lung inflammatory response caused by silica particles in mice.** Guimarães FV, Ferreira TPT, Arantes ACS, Azevedo RB, Martins MA, Silva PMR <sup>1</sup>IOC-Fiocruz

**04.060 The role of FcγR2b and FcγR3a in the gut inflammation after intestinal ischemia and reperfusion.** Brito CB, Arifa RDN, Lima RL, Menezes-Garcia Z, Souza DG <sup>1</sup>UFMG – Microbiologia

**04.061 *Punica granatum* controls inflammation in arthritic chronic assay in rats.** Almeida EKC, Monteiro Silva JF, Oliveira LMS, Viana MDM, Silva Neto GJ, Vieira ACS, Campesatto EA <sup>1</sup>UFAL – Physiology and Pharmacology

**04.062 Nanoencapsulation improves the anti-inflammatory activity of curcumin in rats.** Rocha BA<sup>1</sup>, Rebecca ESW<sup>1</sup>, Ames FQ<sup>1</sup>, Gil APM<sup>1</sup>, Aguiar RP<sup>1</sup>, Silva-Filho SE<sup>1</sup>, Leimann FV<sup>2</sup>, Gonçalves OH<sup>2</sup>, Cuman RKN<sup>1</sup>, Bersani-Amado CA<sup>1</sup> <sup>1</sup>UEM – Pharmacology and Therapeutics, <sup>2</sup>UTFPR – Food Technology

**04.063 Anastrozole increased inflammatory response without enhance alveolar bone loss in ovariectomized rats submitted to periodontitis.** Melo IM<sup>1</sup>, Araújo VMA<sup>2</sup>, Guimarães MV<sup>1</sup>, Calcia TBB<sup>2</sup>, Forte TCM<sup>1</sup>, Ribeiro RA<sup>2</sup>, Lima V<sup>2</sup> <sup>1</sup>UFC – FFOE-UFC, <sup>2</sup>UFC – Physiology and Pharmacology

**04.064 Characterization of leukocytes in adipose tissue of mice after acute and chronic consumption of refined carbohydrate-containing diet.** Silveira ALM<sup>1</sup>, Oliveira MC<sup>1,2</sup>, Nunes LR<sup>1,2</sup>, Rodrigues DF<sup>1,2</sup>, Lana JP<sup>1,2</sup>, Batista NV<sup>1</sup>, Ferreira AVM<sup>1</sup>, Teixeira MM<sup>1</sup> <sup>1</sup>ICB-UFMG – Biochemistry and Immunology, <sup>2</sup>EECC-UFMG – Nutrition

**04.065 Effect of c-Jun NH<sub>2</sub>-terminal kinase (JNK) inhibitor SP600125 on experimental silicosis in mice.** Leite MLM<sup>1</sup>, Arantes ACS<sup>1</sup>, Lagente V<sup>2</sup>, Cordeiro RSB<sup>1</sup>, Martins MA<sup>1</sup>, Silva PMR<sup>1</sup>, Ferreira TPT<sup>1</sup> <sup>1</sup>IOC-Fiocruz, <sup>2</sup>Université de Rennes

**04.066 Effect of a protein fraction isolated from the latex *Calotropis procera* (Ait.) R. Br in the inflammatory response**

*in vitro*. Rangel PFG<sup>1</sup>, Rabelo LFA<sup>1</sup>, Figueiredo TSI<sup>1</sup>, Souza GFT<sup>1</sup>, Alencar NMN<sup>1</sup>, Ramos VM<sup>2</sup> <sup>1</sup>UFC – Physiology and Pharmacology, <sup>2</sup>UFC – Biochemistry and Molecular Biology

**04.067 Anti-inflammatory activity of *Citrus limon* (L.) Burm. f. essential oil in rodents.** Oliveira LMS<sup>1</sup>, Monteiro-Silva JF<sup>1</sup>, Almeida EKC<sup>1</sup>, Silva NKG<sup>1</sup>, Viana MDM<sup>1</sup>, Silva-Neto GJ<sup>1</sup>, Vieira ACS<sup>1</sup>, Sant'Ana AEG<sup>2</sup>, Alexandre-Moreira MS<sup>1</sup>, Campesatto EA<sup>1</sup> <sup>1</sup>UFAL – Physiology and Pharmacology, <sup>2</sup>UFAL – Natural Resources

**04.068 NO and alpha-TNF aggravate the effects of pilocarpine in animal seizure model.** Rios ERV<sup>1,2</sup>, Rocha NFM<sup>1</sup>, Vasconcelos LF<sup>1</sup>, Carvalho AMR<sup>1</sup>, Dias ML<sup>1</sup>, Fonteles MMF<sup>1,3</sup> <sup>1</sup>UFC – Fisiologia e Farmacologia, <sup>2</sup>FAMETRO – Farmácia, <sup>3</sup>UFC – Farmácia

**04.069 Protective effect of complex metallic cis-[RuCl(qui)(bpy)2]PF6 against naproxen- induced gastric damage in mice.** Albuquerque-Teixeira AE<sup>1</sup>, Santana APM<sup>1</sup>, Pires FG<sup>1</sup>, Silva FON<sup>2</sup>, Lopes LGF<sup>2</sup>, Souza MHL<sup>1</sup> <sup>1</sup>UFC – Physiology and Pharmacology, <sup>2</sup>UFC – Organic and Inorganic Chemistry

**04.070 Role of the aryl hydrocarbon receptor in the pathogenesis of sepsis.** Freitas A, Donate PB, Castanheira FVS, Borges VF, Nascimento DC, Talbot J, Alves-Filho JCF, Cunha FQ FMRP-USP – Pharmacology

**04.071 Evaluation of antiedematogenic activity of limonene epoxide in mice.** Almeida AAC<sup>1</sup>, Brito TV<sup>2</sup>, Reis AL<sup>2</sup>, Freitas RM<sup>1</sup> <sup>1</sup>UFPI – Neuroquímica Experimental, <sup>2</sup>UFPI – Fisiofarmacologia Experimental

**04.072 Effect of low-level laser on mRNA expression of inflammatory mediators and kinin receptors in the subplantar muscle of mice paw subjected to *Bothrops moojeni* venom.** Nadur-Andrade N<sup>1</sup>, Silva

Jr JA<sup>2</sup>, Dale CS<sup>3</sup>, Zamuner SR<sup>2</sup> <sup>1</sup>Uninove – Ciências da Reabilitação, <sup>2</sup>Uninove – Medicina, <sup>3</sup>USP – Morphology

**04.073 Effect of fish oil on the acute inflammatory response in rats.** Ames FQ, Arruda LLM, Rocha BA, Gil APM, Aguiar RP, Silva-Comar FMS, Silva-Filho SE, Cuman RKN, Bersani-Amado CA UEM – Pharmacology and Therapeutics

**04.074 Effect of low level laser on C2C12 muscle cells subjected to injury by BthTX-I myotoxin isolated from *Bothrops jararacussu* snake venom.** Santos AS<sup>1</sup>, Zamuner SR<sup>1</sup>, Hyslop S<sup>2</sup> <sup>1</sup>Uninove, <sup>2</sup>Unicamp

**04.075 Hypertension and periodontal disease are factors that change osteogenic gene expressions in rats.** do Amaral CCF, Brito VGB, Landim de Barros T, Chaves-Neto AH, Oliveira SHP FOA-Unesp – Ciências Básicas

**04.076 Phytocannabinoid, beta-caryophyllene, modulates inflammatory response induced by *Mycobacterium bovis bacillus* Calmette-Guérin in pulmonary and pleurisy model of infection.** Andrade-Silva M, Correa L, Candé A, Rosas EC, Henriques MG <sup>1</sup>Farmanguinhos-Fiocruz – Farmacologia Aplicada

**04.077 Local administration of gold nanoparticles prevents pivotal pathological changes in murine models of atopic asthma.** Serra MF<sup>1</sup>, Gomes LC<sup>1</sup>, Barreto EO<sup>2</sup>, Santos RV<sup>2</sup>, Santos CEA<sup>2</sup>, Hickmann J<sup>2</sup>, Cotias AC<sup>1</sup>, Pão CRR<sup>1</sup>, Trindade SG<sup>3</sup>, Schimdt V<sup>3</sup>, Giacomelli C<sup>3</sup>, Carvalho VF<sup>1</sup>, Silva PMR<sup>1</sup>, Cordeiro RSB<sup>1</sup>, Martins MA<sup>1</sup> <sup>1</sup>Fiocruz – Inflamação, <sup>2</sup>UFAL, <sup>3</sup>UFMS – Química

**04.078 Methyl gallate inhibits inflammatory mediators and neutrophils migration in zymosan-induced arthritis.** Correa LB, Pádua TA, Andrade-Silva M, Seito LN,

Henriques MG, Rosas EC CDTs-Fiocruz – Farmacologia Aplicada

**04.079** Evaluation of anti-inflammatory activity of essential oil *Hyptis martiusii* Benth (cidreira brava) by peritonitis carrageenan-induced model. Rodrigues LB<sup>1</sup>, Ramos AGB<sup>1</sup>, Lacerda Neto LJ<sup>1</sup>, Cesário FRAS<sup>1</sup>, Oliveira CDM<sup>1</sup>, Tintino SR<sup>1</sup>, Sales VS<sup>1</sup>, Pereira AOB<sup>2</sup>, Menezes IRA<sup>1</sup>, Rodrigues CKS<sup>1</sup> <sup>1</sup>URCA – Biological Chemistry, <sup>2</sup>UFPE – Fisiologia e Farmacologia

**04.080** Evaluation of anti-inflammatory and antinociceptive activity of the ethanol extract from *Psychotria carascoana*. Aguiar MA<sup>1</sup>, Filho JMSR<sup>1</sup>, Freitas LBN<sup>1</sup>, Araújo BQ<sup>1</sup>, Nascimento RRG<sup>2</sup>, Pimenta ATA<sup>2</sup>, Lima MAS<sup>2</sup>, Leal LKAM<sup>1</sup> <sup>1</sup>UFC – Estudos Farmacêuticos e Cosméticos, <sup>2</sup>UFC – Química Orgânica e Inorgânica

**04.081** Skin pre-exposition with Staphylococcal enterotoxin A (SEA) potentiates mice allergic dermatitis. Cabral-Melo A<sup>1</sup>, Trabulsi V<sup>1</sup>, Ferreira-Duarte AP<sup>1</sup>, Pinheiro-Torres SA<sup>1</sup>, Mello GC<sup>2</sup>, Antunes E<sup>2</sup>, DeSouza IA<sup>1</sup> <sup>1</sup>FMJ – Biologia e Fisiologia, <sup>2</sup>FCM-UNICAMP – Farmacologia

**04.082** Pharmacological evaluation of a new series of sulfonamide derivatives in the control of LPS-induced lung injury in mice. Souza ET<sup>1</sup>, Carvalho VF<sup>1</sup>, Ferreira TPT<sup>1</sup>, Nunes IKC<sup>2</sup>, Ciambarella BT<sup>1</sup>, Barreiro EJJ<sup>2</sup>, Martins MA<sup>1</sup>, Lima LM<sup>2</sup>, Silva PMR<sup>1</sup> <sup>1</sup>IOC-Fiocruz – Inflammation <sup>2</sup>LASSBio-UFRJ

## 05. Pain and Nociception

**05.019** Transient receptor potential ankyrin 1 blockage reduced hyperalgesia in a model of trigeminal neuralgia. Trevisan G<sup>1</sup>, Nassini R<sup>2</sup>, Di Siena G<sup>2</sup>, Materazzi S<sup>2</sup>, Fusi C<sup>2</sup>, Rossato MF<sup>3</sup>, Ferreira J<sup>4</sup>, Geppetti P<sup>2</sup> <sup>1</sup>UNESC – Ciências

da Saúde, <sup>2</sup>Unifi – Ciências da Saúde, <sup>3</sup>UFMS – Química, <sup>4</sup>UFSC – Farmacologia

**05.020** The jararhagin a snake venom metalloproteinase induces mechanical hyperalgesia, paw edema and neutrophil recruitment in mice. Ferraz CR<sup>1</sup>, Calixto-Campos C<sup>1</sup>, Manchope MF<sup>1</sup>, Casagrande R<sup>2</sup>, Moura-da-Silva AM<sup>3</sup>, Baldo C<sup>4</sup>, Verri WA<sup>1</sup> <sup>1</sup>UEL – Departamento Patologia, <sup>2</sup>UEL – Departamento de Ciências Farmacêuticas, <sup>3</sup>IBU – Laboratório de Imunopatologia, <sup>4</sup>UEL – Departamento Bioquímica e Biotecnologia

**05.021** Supraspinal kynurenine pathway contributes to the maintenance of neuropathic pain. Santana DAR, Santanna MB, Fonseca MDM, Souza GR, Cunha TM FMRP – Pharmacology

**05.022** Antinociceptive and anti-inflammatory effects of hydroalcoholic extract of *Licania rigida* in mice. Lima MJA, Vasconcelos FL, Silva MGP, Vasconcelos AG, Melo CTV NUBEM-INTA,

**05.023** Quercetin reduces Ehrlich cells-induced cancer pain in mice: Inhibition of neutrophil recruitment, oxidative stress, cytokines production and activating an opioid receptor-dependent analgesic pathway. Calixto-Campos C<sup>1</sup>, Carvalho TT<sup>1</sup>, Zarpelon AC<sup>1</sup>, Hohmann MSN<sup>1</sup>, Corrêa M<sup>1</sup>, Casagrande R<sup>2</sup>, Verri WA<sup>1</sup> <sup>1</sup>UEL – Ciências Patológicas, <sup>2</sup>UEL – Ciências Farmacêuticas

**05.024** Effect of infrared light emitting diodes infrared on neuropathic pain in rats. Pigatto GR<sup>1</sup>, Agne JE<sup>2</sup>, Bauermann LF<sup>1</sup>, Ferreira J<sup>3</sup>, Santos GT<sup>3</sup>, Freitas RB<sup>1</sup> <sup>1</sup>UFMS – Departamento de Fisiologia e Farmacologia, <sup>2</sup>UFMS – Fisioterapia e Reabilitação, <sup>3</sup>UFMS – Química

**05.025** NOD1 and NOD2 contribute to the genesis of neuropathic pain and are involved in glial cells activation. Santa-Cecília FV, Ferreira DW, Fonseca MD,

Cunha FQ, Zamboni DS, Cunha TM FMRP-USP – Pharmacology

**05.026 Antinociceptive effect of a new compound derived from pyrazole.** Oliveira LP<sup>1</sup>, Florentino IF<sup>1</sup>, Silva DPB<sup>1</sup>, Oliveira TS<sup>2</sup>, Ghedini PC<sup>2</sup>, Menegatti R<sup>3</sup>, Costa EA<sup>1</sup> <sup>1</sup>DCiF-ICB-UFG – Pharmacology of Natural Products, <sup>2</sup>DCiF/ICB/UFG – Biochemistry and Molecular Pharmacology, <sup>3</sup>FF-UFG – Medicinal Pharmaceutical Chemistry

**05.027 Chemokine decoy receptor D6 did not modulate the induction and maintenance of neuropathic pain.** Quadros AU, Violante VD, Alves-Filho JCF, Cunha FQ, Cunha TM FMRP-USP – Pharmacology

**05.028 Nitroxyl inhibits Ehrlich cells-induced cancer pain in mice: Activation of THE cGMP/PKG/ATP-sensitive potassium channel signaling pathway and inhibition of TNF- $\alpha$  and IL-1 $\beta$  production.** Longhi-Balbinot DT<sup>1</sup>, Calixto-Campos C<sup>1</sup>, Medeiros DC<sup>1</sup>, Zarpelon AC<sup>1</sup>, Corrêa M<sup>1</sup>, Miranda KM<sup>2</sup>, Verri WA<sup>1</sup> <sup>1</sup>UEL – Patologia, <sup>2</sup>UA – Chemistry and Biochemistry

**05.029 Central MU, delta and kappa opioid receptors mediate the protective effect of a sulfated polysaccharide isolated from the red seaweed solieria filiformis on temporomandibular joint nociception in rats.** Araújo IWF<sup>1</sup>, Santos RS<sup>2</sup>, Rivanor RLC<sup>3</sup>, Monteiro VS<sup>3</sup>, Pachêco JMS<sup>4</sup>, Vieira LV<sup>5</sup>, Freitas AR<sup>5</sup>, Val DR<sup>6</sup>, Clemente-Napimoga JT<sup>7</sup>, Brito GAC<sup>8</sup>, Bezerra MM<sup>4</sup>, Chave HV<sup>4</sup>, Benevides NMB<sup>3</sup> <sup>1</sup>UFC – Curso de Engenharia de Pesca, <sup>2</sup>UFC – Medicina, <sup>3</sup>UFC – Bioquímica, <sup>4</sup>UFC – Ciências da Saúde, <sup>5</sup>UFC – Odontologia, <sup>6</sup>RENORBIO-UFPE, <sup>7</sup>FOP-Unicamp, <sup>8</sup>UFC – Ciências Morfofuncionais

**05.030 IL-1B and HO-1-independent antinociceptive action of strontium ranelate in zymosan-induced temporomandibular joint inflammatory hypernociception in rats.** Teixeira SC<sup>1</sup>, Alves SM<sup>2</sup>, Lemos JC<sup>1</sup>, Aguiar LMV<sup>2</sup>, Pereira KMA<sup>2</sup>, Brito GAC<sup>3</sup>, Benevides 46th Brazilian Congress of Pharmacology and Experimental Therapeutics

NMB<sup>3</sup>, Filho GC<sup>3</sup>, Pinto VPT<sup>4</sup>, Bezerra MM<sup>4</sup>, Chaves HV<sup>2</sup> <sup>1</sup>UFC – Medicina, <sup>2</sup>UFC – Ciências da Saúde, <sup>3</sup>UFC, <sup>4</sup>UFC – Biotecnologia

**05.031 Participation of the NO/cGMP/K<sup>+</sup>ATP pathway and muscarinic receptor in the antinociceptive action of quercetin.** Lopes EM, Piaulino CA, Araújo JM, Freitas FFBP, Reis Filho AC, Gomes BS, Almeida FRC, Brito SMRC UFPI – Medicinal Plants

**05.032 Sulfated polyssacharides from the red seaweed solieria filiformis reduces mechanical hyper-nociception in the rat temporomandibular joint during zymosan-induced arthritis.** Santos AO<sup>1</sup>, Araújo IWF<sup>2</sup>, Santos RS<sup>3</sup>, Abreu SC<sup>3</sup>, Val DR<sup>4</sup>, Pereira KMA<sup>1</sup>, Brito GAC<sup>5</sup>, Cristino Filho G<sup>1</sup>, Pinto VPT<sup>1</sup>, Clemente-Napimoga JT<sup>6</sup>, Bezerra MM<sup>1</sup>, Chaves HV<sup>1</sup>, Benevides NMB<sup>7</sup> – <sup>1</sup>UFC – Ciências da Saúde, <sup>2</sup>UFC – Engenharia de Pesca, <sup>3</sup>UFC – Medicina, <sup>4</sup>RENORBIO-UFPE, <sup>5</sup>UFC – Ciências Morfofuncionais, <sup>6</sup>FOP-Unicamp, <sup>7</sup>UFC – Bioquímica

**05.033 Analgesic and anti-inflammatory effects and mechanisms of action of pimaradienoic acid.** Zarpelon AC<sup>1</sup>, Possebon MI<sup>1</sup>, Mizokami SS<sup>1</sup>, Hohmann MSN<sup>2</sup>, Staurengo-Ferrari L<sup>1</sup>, Carvalho TT<sup>1</sup>, Ambrosio SR<sup>3</sup>, Arakawa NS<sup>2</sup>, Casagrande R<sup>2</sup>, Verri WA<sup>1</sup> <sup>1</sup>UEL – Patologia, <sup>2</sup>UEL – Ciências da Saúde, <sup>3</sup>Unifran – Ciências Exatas e Tecnológicas

**05.034 Vanillic acid inhibits inflammatory pain in mice: Effect on oxidative stress, cytokine production and NFkB.** Zarpelon AC<sup>1</sup>, Calixto-Campos C<sup>1</sup>, Carvalho TT<sup>1</sup>, Hohmann MSN<sup>1</sup>, Pinho-Ribeiro FA<sup>1</sup>, Fattori V<sup>1</sup>, Manchope MF<sup>1</sup>, Casagrande R<sup>2</sup>, Verri WA<sup>1</sup> <sup>1</sup>UEL – Patologia, <sup>2</sup>UEL – Ciências Farmacêuticas

**05.035 Spinal cord BDNF levels increase after dexamethasone treatment in male rats with chronic inflammation.** Souza ICC<sup>1</sup>, Laste G<sup>2</sup>, Rozisky JR<sup>2</sup>, Macedo IC<sup>2</sup>,

Souza VS<sup>2</sup>, Caumo W<sup>2</sup>, Torres ILS<sup>3</sup> <sup>1</sup>UPPel – Morfologia, <sup>2</sup>UFRGS, <sup>3</sup>UFRGS – Farmacologia

**05.036** Differential modulation of nociception after mild dorsal periaqueductal gray stimulation: influence of aversive context. Souza AS, Mujica EMM, Bottamedi M, Tonussi CR UFSC – Farmacologia

## **06. Cardiovascular and Renal**

**06.022** NCX2121-induced relaxation is due to intracellular NO release and reduction in TXA<sub>2</sub> production. Paula TD<sup>1</sup>, Silva BR<sup>1</sup>, Grando M D<sup>1</sup>, Pernomian L<sup>2</sup>, Bendhack LM<sup>1</sup> <sup>1</sup>FCFRP-USP-USP – Física e Química, <sup>2</sup>FMRP-USP – Farmacologia

**06.023** Endothelial NO-Synthase is involved in decreased epinephrine-induced contraction in renal hypertensive rat aorta by beta-adrenoceptor activation. Bocalon AC, Silva BR, Grando MD, Bendhack LM FCFRP-USP – Física e Química

**06.024** The synergism between ischemic postconditioning and lysophosphatidic acid (LPA) on renal function of rats subjected to kidney ischemia-reperfusion. Gonsalez SR, Monteiro SH, Leal AC, Costa RS, Souza P H M, Einicker-Lamas M, Lara LS UFRJ – Farmacologia

**06.025** Beneficial effects of aldosterone mediated by GPER (G protein-coupled estrogen receptors) activation are decreased in mesenteric arteries of diabetic animals.

Ferreira NS<sup>1</sup>, Cau SBA<sup>2</sup>, Manzano CP<sup>1</sup>, Silva MAB<sup>1</sup>, Carneiro FS<sup>1</sup>, Tostes RC<sup>1</sup> <sup>1</sup>FMRP-USP – Pharmacology, <sup>2</sup>UFJF – Basic Health Sciences

**06.026** Chronic treatment with red wine modulates the purinergic neurotransmission and decrease oxidative stress and blood pressure in rats SHR and diabetic-STZ. Musial DC, Bomfim GHS, Miranda-Ferreira R, Rocha KKHR,

Jurkiewicz A, Jurkiewicz NH Unifesp – Farmacologia

**06.027** Impaired vascular reactivity in rats fed with moderately high fructose chow involves changes in nitric oxide production and calcium mobilization. Silva RCF<sup>1</sup>, de Souza P<sup>1</sup>, Da Silva-Santos JE<sup>2</sup> <sup>1</sup>UFPR, <sup>2</sup>UFSC

**06.028** Pinitol ameliorates pressure natriuresis in diabetic rats. Sousa LGF, Cortez LUAS, Regis SRS, Fonteles MC, Nascimento NRF, Santos CF UECE – Ciências Fisiológicas

**06.029** Potential vasodilatory and anti-inflammatory effects of a new thienylacylhydrazone derivative LASSBio-788. Motta NAV<sup>1</sup>, Fumian MM<sup>1</sup>, Brito GB<sup>1</sup>, Barreiro EJJ<sup>2</sup>, Kummerle AE<sup>3</sup>, Brito FCF<sup>1</sup> <sup>1</sup>LAFE-UFF, <sup>2</sup>UFRJ – Avaliação e Síntese de Substâncias Bioativas, <sup>3</sup>UFRJ – Química

**06.030** Serotonin and venous hyporeactivity in endotoxemic rats. Carioletti GH<sup>1</sup>, Nardi GM<sup>2</sup>, Linder AE<sup>1</sup> <sup>1</sup>UFSC – Farmacologia, <sup>2</sup>UNOESC

**06.031** Effects of early weaning on nutrition and cardiovascular parameters of rats in different life stages. Barros RBM, Marques EB, Rocha NN, Scaramello CBV UFF – Neurociências

**06.032** PK 11195 Translocator Protein 18 Kd ligand improves parameters commonly evaluated in experimental sepsis. Quibem LA<sup>1</sup>, Ribeiro JT<sup>1</sup>, Arruda TB<sup>1</sup>, Linder AE<sup>2</sup>, da Silva-Santos JE<sup>2</sup>, Nardi GM<sup>1</sup> <sup>1</sup>UNOESC – Farmacologia, <sup>2</sup>UFSC – Farmacologia

**06.033** Serotonergic antagonists in septic shock. Lobo KL<sup>1</sup>, Nardi GM<sup>2</sup>, Linder AE<sup>1</sup> <sup>1</sup>UFSC – Pharmacology, <sup>2</sup>UNOESC – Biological and Health Sciences

**06.034** Endothelium-dependent dilatory effect of estrone, an equine estrogen, in rat thoracic aorta. Oliveira TS, Oliveira LM, Peixoto LF, Filgueira FP, Ghedini PC



**06.035** Morphometric and biochemistry evaluation in protective effect on myocardial of the hydroalcoholic extract of red propolis in infarcted rats with isoproterenol. Clementino-Neto J, Tenório EP, Ferreira AKB, Beiriz RV, Moura MTD, Oliveira JMS, Nascimento TG, Ribeiro EAN ESENFAR-UFAL

**06.036** Ethanol withdrawal induces oxidative stress: Role of AT1 receptors. Gonzaga NA<sup>1</sup>, Tirapelli CR<sup>2</sup> <sup>1</sup>FMRP-USP – Farmacologia, <sup>2</sup>EERP-USP – Enfermagem Psiquiátrica e Ciências Humanas

**06.037** Evaluation of the antiacoagulant agent curcumin in bleeding models by transection of the tail in mice. Macêdo AJR, Neta MJCN, Campêlo JAC, Rosa LD, Feitosa ML INTA – Farmácia

**06.038** Apocynin prevents oxidative stress induced by chronic ethanol consumption in the rat mesenteric bed. Hipolito UV<sup>1</sup>, Leite LN<sup>2</sup>, Tirapelli CR<sup>1</sup> <sup>1</sup>EPCH-USP, <sup>2</sup>USP – Farmacologia

**06.039** Cardiovascular effects induced by tetrahydrofurfuryl nitrate (NTHF), a new nitric oxide donor, in spontaneously hypertensive rats. Silva TAF<sup>1</sup>, Furtado FF<sup>2</sup>, Machado NT<sup>1</sup>, Queiroz TM<sup>3</sup>, Alustau MC<sup>1</sup>, Assis VL<sup>3</sup>, Vasconcelos WP<sup>1</sup>, Oliveira-Filho AA<sup>1</sup>, Veras RC<sup>1</sup>, Santos AF<sup>3</sup>, Athayde-Filho PF<sup>3</sup>, Medeiros IA<sup>1</sup> <sup>1</sup>DCF-CCS-UFPB, <sup>2</sup>ETSC-CFP-UFCG, <sup>3</sup>CCS-UFPB

**06.040** Functional and molecular analyses of heart in different experimental models of sepsis in rats. Gonçalves RPM, Assreuy J, da Silva-Santos JE UFSC – Farmacologia

**06.041**  $\beta$ -citronellol evokes vago-vagal bradycardiac and hypotensive reflex in normotensive rats. Veras HRF, Silva CMS, De Siqueira RJB, Lahlou S, Magalhães PJC UFC Physiology and Pharmacology

**06.042** Ethyl acetate fraction from the inflorescences of *Mimosa caesalpinifolia* reduces intracellular calcium in smooth muscle. Santos MEP<sup>1</sup>, Silva-Filho JC<sup>1</sup>, Moura LHP<sup>1</sup>, Arcanjo DDR<sup>1</sup>, Citó AMGL<sup>2</sup>, Paulo M<sup>3</sup>, Restini CBA<sup>4</sup>, Bendhack LM<sup>3</sup>, Oliveira AP<sup>1</sup> <sup>1</sup>UFPI – Plantas Medicinais, <sup>2</sup>UFPI – Química, <sup>3</sup>FCFRP-USP, <sup>4</sup>FMRP-USP

## 07. Endocrine and Gastrointestinal

**07.001** Protective effect of epiisopiloturine hydrochloride, a semisynthetic imidazole alkaloid isolated from *Pilocarpus microphyllus* leaves, on naproxen-induced gastrointestinal damage in rats. Nicolau LAD<sup>1</sup>, Carvalho NS<sup>1</sup>, Pacifico DM<sup>1</sup>, Quaresma MP<sup>1</sup>, Lucetti LT<sup>2</sup>, Aragão KS<sup>2</sup>, Leite JRA<sup>1</sup>, Souza MHL<sup>2</sup>, Medeiros JVR<sup>1</sup> <sup>1</sup>UFPI, <sup>2</sup>UFC

**07.002** Phytochemical screening and gastroprotective effect OF *Maytenus erythroxylon* Reissek (Celastraceae) against cold restrain stress induced ulcers in mice. Formiga RO<sup>1</sup>, Sousa CGBL<sup>1</sup>, Silva AKM<sup>1</sup>, Souza SS<sup>1</sup>, Silva Filho RN<sup>2</sup>, Quirino ZGM<sup>3</sup>, Batista LM<sup>1</sup> <sup>1</sup>CCS-DCF-UFPB, <sup>2</sup>UFPB, <sup>3</sup>CCAE-DEMA-UFPB

**07.003** Does hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) have a dual effect on the C57Bl/6 isolated ileum? Cesário TAM, Carbonel AAF, Simões MJ, Lungato L, D'Almeida V, Rigoni VLS, Nouailhetas VLA Unifesp

**07.005** Polysaccharide extracted from *Caesalpinia ferrea* prevents alendronate-induced gastric damage in rats. Pacifico DM<sup>1</sup>, Silva OR<sup>2</sup>, Pereira MG<sup>2</sup>, Araújo S<sup>1</sup>, Quaresma MP<sup>1</sup>, Nicolau LAD<sup>3</sup>, Araújo TSL<sup>1</sup>, Medeiros JVR<sup>1</sup>, Soares PMG<sup>2</sup> <sup>1</sup>LAFFEX-UFPI, <sup>2</sup>LAFICA-UFC, <sup>3</sup>NPPM-UFPI

**07.006** Antidiarrheal activity of cashew gum, a complex heteropolysaccharide of *Anacardium occidentale* L., in rats. Araújo TSL, Sousa NA, Pacifico DM, Carvalho NS, Araújo S, Sousa FBM, Quaresma MP, Barbosa AL, Medeiros JVR LAFFEX-UFPI

**07.007** Antidiarrheal activity of *Cissampelos sympodialis* Eichl. (Menispermaceae). Sales IRP<sup>1</sup>, Sousa CGBL<sup>2</sup>, Formiga RO<sup>2</sup>, Nascimento RF<sup>1</sup>, Lúcio ASSC<sup>1</sup>, Barbosa-Filho JM<sup>2</sup>, Batista LM<sup>2</sup> <sup>1</sup>UFPB – Produtos Naturais e Sintéticos Bioativos, <sup>2</sup>UFPB – Ciências Farmacêuticas

**07.008** Gastroprotective effect of 1,4-cineole in ethanol-induced gastric lesions by macroscopic and microscopic analysis. Chaves Filho AJM, Feitosa ML, Venâncio ET, Lima CNC, Fonteles MMF, Florenço FC UFC – Physiology and Pharmacology

**07.009** Intestinal anti-inflammatory effect of *Combretum duartheanum* Cambess (Combretaceae) leaves in TNBS colitis model (Acute Model). Lima GRM, Machado FDF, Nascimento RF, Silva AKM, Tavares JF, Batista LM UFPB – Ciências Farmacêuticas

**07.010** Enteric neuropathy induces changes in enteric nervous system and in nNOS expression in female diabetic rats. Da Silva LM<sup>1</sup>, Maria-Ferreira D<sup>1</sup>, Da Silva RCMVAF<sup>1</sup>, Crestani S<sup>2</sup>, Vicentino-Vieira SL<sup>3</sup>, Da Silva Santos JE<sup>2</sup>, Sant'Ana DMG<sup>3</sup>, Baggio CH<sup>1</sup>, Werner MFP<sup>1</sup> <sup>1</sup>UFPR – Farmacologia, <sup>2</sup>UFSC – Farmacologia, <sup>3</sup>UEM – Ciências Morfológicas

**07.011** Gastroprotective properties of cashew gum, a complex heteropolysaccharide of *Anacardium occidentale*, in naproxen-induced gastrointestinal damage in rats. Carvalho NS<sup>1</sup>, Silva MM<sup>1</sup>, Nicolau LAD<sup>2</sup>, Silva RO<sup>3</sup>, Soares PMG<sup>3</sup>, Silva DA<sup>1</sup>, Leite JRSA<sup>1</sup>, Medeiros RJV<sup>1</sup> <sup>1</sup>UFPI – Biotechnology, <sup>2</sup>UFPI – Pharmacology, <sup>3</sup>UFC – Pharmacology

**07.012** Actions of nitric oxide (NO) or hydrogen sulfide (H<sub>2</sub>S) donors and possible interactions between the two systems in gastric functions in rodents. Lucetti LT<sup>1</sup>, Medeiros JVR<sup>2</sup>, Santana APM<sup>1</sup>,

Tavares BM<sup>1</sup>, Soares PMG<sup>3</sup>, Vale ML<sup>1</sup>, Ribeiro RA<sup>1</sup>, Souza MHL<sup>1</sup> – <sup>1</sup>UFC – Fisiologia e Farmacologia, <sup>2</sup>UFPI – Biologia, <sup>3</sup>UFC – Morfologia

**07.013** Regulation of nodal, Cripto and Smad 4 expression during decidualization and by steroid hormones in human endometrial stromal cells. Dela Cruz C<sup>1,2</sup>, Kaya HS<sup>2</sup>, Taylor RN<sup>3</sup>, Reis FM<sup>1</sup>, Bagchi MK<sup>2</sup> <sup>1</sup>UFMG – Obstetrícia e Ginecologia, <sup>2</sup>UI – Molecular and Integrative Physiology, <sup>3</sup>WFBMC

**07.014** Inhibition of intestinal transit induced by clozapine in mice: Role of cholinergic, serotonergic and endocannabinoid systems. Marques AC, Viana AFC, Arruda BR, Rao VS, Santos FA UFC – Fisiologia e Farmacologia

**07.015** Intestinal anti-inflammatory effect of ethyl acetate phase of *Maytenus obtusifolia*. Machado FDF, Lima GRM, Paulo LL, Souza SS, Tavares JF, Batista LM UFPB

**07.016** Acute toxicity and gastroprotective effect of rosmarinic acid in gastric ulcer model induced by ethanol/HCl in mice. Nascimento RF, Sales RPS, Paulo LL, Machado DFM, Barbosa-Filho JM, Batista ML UFPB – Ciências Farmacêuticas

**07.017** Chronic aerobic exercise changes the contractile reactivity of rat ileum. Araujo LCC<sup>1</sup>, Souza ILL<sup>2</sup>, Vasconcelos LHC<sup>2</sup>, Cavalcante FA<sup>3,2</sup>, Silva BA<sup>4,1,2</sup> <sup>1</sup>UFPB – PPgBCM, <sup>2</sup>UFPB – PPgPNSB, <sup>3</sup>DFP-UFPB, <sup>4</sup>DCF-UFPB

**07.018** Gastroprotective activity of the geopropolis of *Melipona Fasciculata* Smith (Tíúba). Sousa AKA<sup>1</sup>, Melo DNS<sup>1</sup>, Barroso WA<sup>2</sup>, Pessoa DLR<sup>1</sup>, Freire SMF<sup>1</sup>, Borges ACR<sup>1</sup>, Dutra RP<sup>1</sup>, Borges MOR<sup>1</sup> <sup>1</sup>UFMA, <sup>2</sup>USP

**07.019** Gastroprotective effect of baicalein against ethanol/HCL-induced gastric damage in mice. Ribeiro ARS, Thomazzi SM UFS – Fisiologia

## **09. Natural Products and Toxinology**

**09.053** Action of clathrotrin and analogues: small molecule modulators of voltage-gated ion channels. Peigneur S<sup>1</sup>, Zula A<sup>2</sup>, Zidar N<sup>2</sup>, Chan-Porter F<sup>3</sup>, Kirby R<sup>3</sup>, Rogers M<sup>3</sup>, Madge D<sup>3</sup>, Ilas J<sup>2</sup>, Kikelj D<sup>2</sup>, Tytgat J<sup>1</sup> <sup>1</sup>KULeuven – Toxicology & Pharmacology, <sup>2</sup>University of Ljubljana – Pharmacy, <sup>3</sup>Xention Ltd

**09.054** High-mobility group box-1 protein in adenine-induced chronic renal failure and the influence of gum arabic thereon. Ali B H<sup>1</sup>, Al Za'abi M<sup>1</sup>, Al Shukaili A<sup>2</sup>, nemmar A – <sup>1</sup>Sultan Qaboos – Pharmacology, <sup>2</sup>Sultan Qaboos University – Microbiology and Immunology

**09.055** Effects of (-)-myrtenol on human gastric epithelial cell viability and migration. Viana AFSC<sup>1</sup>, Santos VG<sup>2</sup>, Silva ACA<sup>2</sup>, Lopes MTP<sup>2</sup>, Sousa DP<sup>3</sup>, Oliveira RCM<sup>4</sup>, Santos FA<sup>1</sup> <sup>1</sup>UFC – Pharmacology, <sup>2</sup>UFMG – Pharmacology, <sup>3</sup>UFPB, <sup>4</sup>UFPI – Medicinal Plants

**09.056** Efficacy of lectin from *Abelmoschus esculentus* on zymosan-induced temporomandibular joint inflammatory hypernociception in rats. Freitas RS<sup>1</sup>, Fernandes MEF<sup>2</sup>, Vieira FTA<sup>3</sup>, Lacerda JTJG<sup>4</sup>, Gadelha TS<sup>4</sup>, Pereira KMA<sup>5</sup>, Brito GAC<sup>6</sup>, Cristino Filho G<sup>1</sup>, Pinto VPT<sup>1</sup>, Bezerra MM<sup>1</sup>, Pinto IR<sup>1</sup>, Gadelha CAA<sup>4</sup>, Chaves HV<sup>3</sup> <sup>1</sup>UFC-Sobral – Biotecnologia, <sup>2</sup>UFC-Sobral – Odontologia, <sup>3</sup>UFC-Sobral – Medicina, <sup>4</sup>UFPB – Biologia Celular e Molecular, <sup>5</sup>UFC-Sobral – Ciências da Saúde, <sup>6</sup>UFC – Ciências Morfofuncionais

**09.057** Analysis of phenolic contents and harpagoside of crude extract and ethyl acetate fraction of *Harpagophytum procumbens* by HPLC/DAD and its

inhibitory activity on monoamine oxidase. Schaffer LF<sup>1</sup>, Busanello A<sup>1</sup>, Peroza LR<sup>2</sup>, Boligon AA<sup>3</sup>, Dotto MM<sup>4</sup>, Athayde ML<sup>3</sup>, Sudati JH<sup>5</sup>, Fachineto R<sup>1</sup>, Wagner C<sup>5</sup> – <sup>1</sup>UFSM – Farmacologia, <sup>2</sup>UFSM – Bioquímica Toxicológica, <sup>3</sup>UFSM – Ciências Farmacêuticas, <sup>4</sup>UFSM – Farmácia, <sup>5</sup>Unipampa

**09.058** Effects of long-term administration of *Senna occidentalis* seeds on the hematopoietic tissue of rats. Teles AVFF, Górniak SL FMVZ-USP – Pathology

**09.059** Antimicrobial activity of *Nectandra lanceolata* essential oil. Pires LC<sup>1</sup>, Garlet QI<sup>2</sup>, Spall S<sup>1</sup>, Gressler LT<sup>3</sup>, Júnior GB<sup>3</sup>, Silva DT<sup>4</sup>, Vargas APC<sup>5</sup>, Heinzmann BM<sup>6</sup> <sup>1</sup>UFSM – Farmácia, <sup>2</sup>UFSM – Farmacologia, <sup>3</sup>UFSM – Medicina Veterinária, <sup>4</sup>UFSM – Engenharia Florestal, <sup>5</sup>UFSM – Medicina Veterinária Preventiva, <sup>6</sup>UFSM – Farmácia Industrial

**09.060** Resin from *Protium heptaphyllum* inhibits adipogenesis through the PPAR-γ signaling Pathway in 3T3-L1 cells. Melo KM, Marinho Filho JDB, Araujo AJ, Rao VS, Santos FA UFC – Physiology and Pharmacology

**09.061** Heparin antagonizes the cytotoxic and some enzymatic activities of *Apis mellifera* bee venom. El-kik CZ<sup>1</sup>, Gaban GA<sup>1</sup>, Fonseca TF<sup>1</sup>, Tavares-Henriques MS<sup>1</sup>, Calil-Elias S<sup>2</sup>, Melo PA<sup>1</sup> <sup>1</sup>UFRJ – Farmacologia, <sup>2</sup>UFF – Farmacologia

**09.062** *Ex vivo* effect of *Terminalia tanibouca* ethanolic extract on the gastric wall mucus of mice. Nunes PHM<sup>1</sup>, Sousa PMB<sup>2</sup>, Barros RM<sup>3</sup>, Brito KS<sup>1</sup>, Martins MCC<sup>1,3</sup> <sup>1</sup>UFPI, <sup>2</sup>UESPI, <sup>3</sup>UNINOVAFAP

**09.063** Fish oil reduces CFA inflammatory pain by modulating PGE2, TNF-α and resolvins levels. Lobo BWL<sup>1</sup>, Teixeira MS<sup>1</sup>, Silva NLC<sup>2</sup>, Silva LL<sup>2</sup>, Lima CKF<sup>2</sup>, Miranda ALP<sup>2</sup>, Ramos MFS<sup>1</sup>, Dellamora-Ortiz GM<sup>1</sup> <sup>1</sup>DEFARMED-FF-UFRJ, <sup>2</sup>BioTecFar-UFRJ-FF

**09.064** Evaluation of the antispasmodic effect of *Cardiospermum corindum* L. (Sapindaceae) on rat ileum. Silva VA<sup>1</sup>, Freire IS<sup>1</sup>, Rigoni VLS<sup>2</sup>, Costa AEA<sup>2</sup>, Silva FL<sup>3</sup>, Barbosa-Filho JM<sup>3</sup>, Nouailhetas VLA<sup>2</sup>, Silva JLV<sup>1</sup> <sup>1</sup>Uninove – Farmácia-Bioquímica, <sup>2</sup>Unifesp – Biofísica, <sup>3</sup>UFPB

**09.065** Cytotoxic activity of BTAHF, a new hemorrhagic P-I class SVMP isolated FROM *Bothriopsis taeniata* snake venom, on C2C12 myoblasts and myotubes cell lines. Torres-Huaco FD<sup>1,2</sup>, Bustillo S<sup>3</sup>, Leiva LC<sup>3</sup>, Marangoni S<sup>1</sup> <sup>1</sup>IB-Unicamp – Bioquímica, <sup>2</sup>FCM-Unicamp – Farmacologia, <sup>3</sup>UNNE – Bioquímica

**09.066** Neuropharmacological characterization of hexanic extract isolated from *Prasiola crispa* antarctic algae. Lorensi GH<sup>1</sup>, Oliveira RS<sup>1</sup>, Almeida CGM<sup>1</sup>, Correa MS<sup>1</sup>, Pereira AB<sup>1</sup>, Ramos BCJ<sup>2</sup>, Teixeira VL<sup>2</sup>, Dal Belo CA<sup>1</sup> <sup>1</sup>Lanetox-Unipampa, <sup>2</sup>ALGAMAR-UFF

**09.067** Mucoadhesive formulation containing *Bidens pilosa* L. (Asteraceae) reduces intestinal injury against 5-fluorouracil-induced mucositis in mice. Ávila RI<sup>1</sup>, Ávila PHM<sup>1</sup>, Santos Filho EX<sup>1</sup>, Bastos CCC<sup>1</sup>, Batista AC<sup>2</sup>, Serpa RC<sup>3</sup>, Marreto RN<sup>1</sup>, Lima EM<sup>1</sup>, Mendonça EF<sup>2</sup>, Valadares MC<sup>1</sup> <sup>1</sup>FARMATEC-UFG – Farmacologia e Toxicologia Celular, <sup>2</sup>FO-UFG – Patologia Bucal

**09.068** Effect of monoterpene 1.8-cineole in the gastric ulcer healing. Caldas GFR<sup>1</sup>, Silva ELV<sup>1</sup>, Araújo AV<sup>2</sup>, Neto JCS<sup>3</sup>, Wanderley AG<sup>1,4</sup> <sup>1</sup>UFPE – Pharmaceutical Sciences, <sup>2</sup>CAV-UFPE – Nutrition, <sup>3</sup>UFPE – Histology and Embryology, <sup>4</sup>UFPE – Physiology and Pharmacology

**09.069** Fixed oil from the pulp of *Caryocar coriaceum* Wittm. (Pequi) delays the onset of convulsive behavior induced by pentylenetetrazol in mice. Ribeiro LR<sup>1</sup>, de Oliveira CC<sup>2</sup>, de Oliveira CV<sup>1</sup>, Grigoletto J<sup>1</sup>, de Souza TL<sup>1</sup>, Grauncke

ACB<sup>1</sup>, Furian AF<sup>3</sup>, de Menezes IRA<sup>4</sup>, Oliveira MS<sup>1</sup> <sup>1</sup>UFMS – Physiology and Pharmacology, <sup>2</sup>URCA – Nursing, <sup>3</sup>UFMS – Food Science and Technology, <sup>4</sup>URCA – Biological Chemistry

**09.070** Protective effect of lectin from *Mucuna pruriens* (Mp) seeds on ethanol-induced gastropathy depends on alpha-2 adrenoceptors and prostaglandins. Pinto IR<sup>1</sup>, Maciel LM<sup>2</sup>, Monteiro DAM<sup>3</sup>, Matos SO<sup>3</sup>, Ribeiro KA<sup>1</sup>, Freitas RS<sup>1</sup>, Gadelha TS<sup>4</sup>, Lacerda JTJG<sup>4</sup>, Gadelha CAA<sup>4</sup>, Benevide NMB<sup>5</sup>, Brito GAC<sup>6</sup>, Pinto VPT<sup>1,2,8</sup>, Bezerra MM<sup>2,1,8</sup>, Pereira Filho SM<sup>2</sup>, Cristino Filho G<sup>2,1,7</sup>, Silva AAR<sup>3,1</sup> <sup>1</sup>UFC – Biotechnology, <sup>2</sup>UFC – Medicine, <sup>3</sup>UFC – Dentistry, <sup>4</sup>UFPB – Molecular Biology, <sup>5</sup>UFC – Biochemistry and Molecular Biology, <sup>6</sup>UFC – Morphology, <sup>7</sup>UFC – Health Sciences

**09.071** Gastroprotective effect of ethanolic extract chloroform fraction of *Croton argyrophyllus* Kunth. Oliveira DF, Estevam CS, Araújo SA, Batista JS UFS – Fisiologia

**09.072** Antiophidic activity of solanidane and iminosolanidane alkaloids from *Solanum campaniforme*. Jorge RJB<sup>1</sup>, Torres MCM<sup>2</sup>, Ximenes RM<sup>3</sup>, Alves NTQ<sup>1</sup>, Santos JVA<sup>1</sup>, Marinho AD<sup>1</sup>, Toyama MH<sup>4</sup>, Braz-Filho R<sup>5</sup>, Silveira ER<sup>2</sup>, Silveira JAM<sup>1</sup>, Costa PHS<sup>1</sup>, Pessoa ODL<sup>2</sup>, Monteiro HSA<sup>1</sup> <sup>1</sup>UFC – Fisiologia e Farmacologia, <sup>2</sup>UFC – Química Orgânica e Inorgânica, <sup>3</sup>UFPE – Antibióticos, <sup>4</sup>Unesp – Química de Macromoléculas, <sup>5</sup>Faperj/UENF/UFRJ

**09.073** A rapid method to isolate bufadienolides from toad *Rhinella schneideri* venom by flash column chromatography. Cunha-Filho GA<sup>1</sup>, Costa PRR<sup>2</sup>, Teixeira Jr E<sup>2</sup>, Barcellos J<sup>2</sup>, Martins-Ferreira J<sup>1</sup>, Quintas LE<sup>1</sup>, Noël F<sup>1</sup> <sup>1</sup>ICB-UFRJ, <sup>2</sup>IPPN-UFRJ

**09.074** Isolation and biochemical characterization of A γ-type phospholipase A2 inhibitor from *Crotalus durissus collilineatus* snake serum. Gimenes SNC<sup>1</sup>,

Ferreira FB<sup>1</sup>, Silveira ACP<sup>1</sup>, Rodrigues R S<sup>1</sup>, Yoneyama KAG<sup>1</sup>, dos Santos JI<sup>2</sup>, Fontes MRM<sup>2</sup>, Brites VLC<sup>3</sup>, Santos ALQ<sup>4</sup>, Borges MH<sup>5</sup>, Lopes DS<sup>1</sup>, Rodrigues VM<sup>1</sup> <sup>1</sup>UFU – Genética e Bioquímica, <sup>2</sup>Unesp – Física e Biofísica, <sup>3</sup>UFU – Biologia, <sup>4</sup>UFU – Medicina Veterinária, <sup>5</sup>FUNED

**09.075 Neuroprotective efficacy of eugenol in Huntington's disease: Behavioral alterations and oxidative stress.** Nobrega RF<sup>1</sup>, Teixeira HAP<sup>1</sup>, Linard-Medeiros CFB<sup>2</sup>, Silva JL<sup>2</sup>, Sereniki A<sup>2</sup>, Sales VAW<sup>1</sup>, Melo VCS<sup>1</sup>, Melo THC<sup>1</sup>, Silva JBR<sup>2</sup>, Lagranha C<sup>3</sup>, Wanderley AG<sup>1</sup>, Lafayette SSL<sup>1</sup> <sup>1</sup>UFPE – Fisiologia e Farmacologia, <sup>2</sup>UFPE – Ciências Farmacêuticas, <sup>3</sup>CAV-UFPE

**09.076 Evaluation of the antifungal activity of the essential oil of *Tagetes minuta* L. against *Candida albicans*.** Cunha JA<sup>1</sup>, Bolzan LP<sup>2</sup>, Oliveira AM<sup>3</sup>, Fausto V<sup>2</sup>, Vaucher RA<sup>2</sup>, Silva DT<sup>4</sup>, Baldisserotto B<sup>1</sup>, Heinzmann B<sup>1</sup> <sup>1</sup>CCS-UFSM – Farmacologia, <sup>2</sup>UNIFRA, <sup>3</sup>UFSM – Farmácia, <sup>4</sup>UFSM – Engenharia Florestal

**09.077 Antipidic properties of a polysaccharide isolated from brazilian marine algae.** Rodrigues-Silva AC<sup>1</sup>, Fuly AL<sup>1</sup>, Duarte MER<sup>2</sup>, Nosedá MD<sup>2</sup>, Ferreira LG<sup>2</sup>, Sanchez EF<sup>3</sup> – <sup>1</sup>UFF – Biologia Molecular e Bioquímica, <sup>2</sup>UFPR, <sup>3</sup>FUNED

**09.078 Antidepressant-like effect of the lectin from the marine red alga *Solieria filiformis* (Kützinger) P.W. Gabrielson.** Abreu TM<sup>1</sup>, Martins AB<sup>1</sup>, Monteiro VS<sup>1</sup>, Rivanor RLC<sup>1</sup>, Teles FB<sup>1</sup>, Souza RB<sup>1</sup>, Danziato PM<sup>1</sup>, Dantas RC<sup>1</sup>, Vasconcelos SMM<sup>2</sup>, Júnior JERH<sup>2</sup>, Benevides NMB<sup>1</sup> <sup>1</sup>UFC – Biochemistry and Molecular Biology, <sup>2</sup>UFC – Physiology and Pharmacology

**09.079 Evaluation of synthetics derivatives in neutralization some toxic activities of *Bothrops jararacussu* venom.** Pires AMG<sup>1</sup>, Rodrigues-Silva AC<sup>1</sup>, Fuly AL<sup>1</sup>, Ferreira SB<sup>2</sup>, Sanchez EF<sup>3</sup> <sup>1</sup>UFF – Biologia

Molecular, Celular e Bioquímica, <sup>2</sup>UFRJ – Química, <sup>3</sup>FUNED

**09.080 Acetone extract of NP01 stimulates the healing activity in skin pressure ulcer and acts as a potent anti-inflammatory.** Gomes MF, Santos GCQ, Castro LD, Bastos AC, Mota AS, Nascimento JLM, Bastos GNT UFPA

**09.081 Nanoemulsion-based formulation increases antiedematogenic activity for hidroalcoholic extract from *Casearia sylvestris*.** Lenfers B<sup>1</sup>, Batisti AP<sup>2</sup>, Martins TC<sup>1</sup>, Benevides MLACS<sup>3</sup>, Custodio KM<sup>4</sup>, Kanis LA<sup>5</sup>, Santos ARS<sup>1</sup>, Martins DF<sup>5</sup>, Piovezan AP<sup>5</sup> <sup>1</sup>UFSC – Neurobiology of Pain and Inflammation, <sup>2</sup>UNISUL – Naturology, <sup>3</sup>UNISUL – Medicine, <sup>4</sup>UNISUL – Pharmacy, <sup>5</sup>UNISUL – Health Sciences.

**09.082 The extract MS2AP improves the anti-inflammatory process and the tissue repair in pressure ulcer model.** Santos GCQ, Gomes MF, Castro LD, Mota AS, Nascimento GS, Bastos AC, Nascimento JLM, Bastos GNT UFPA

**09.083 The effect of *Syzygium cumini* (L.) Skeels (jambolão) in a model of polycystic ovaries induced in rats.** Soares CR, Sena GM, Silva SN, Benevides ROA, Silveira WF, Mendes EG, Abreu IC, Cartágenes MSS, Borges MOR, Pedrosa MCG, Borges ACR UFMA – Ciências Fisiológicas

**09.084 Effect of Glycine max(L.) (soy isoflavones) in model in rats induced ovarian polycystic.** Sena GM, Soares CR, Silveira WF, Mendes EG, Borges ACR, Borges MOR, Freire SMF, Cartágenes MSS, Abreu IC, Silva SN UFMA – Farmacologia

**09.085 Lectin from the green seaweed *Caulerpa cupressoides* down regulates inflammatory hypernociception in the temporomandibular joint arthritis in rats.** Rivanor RLC<sup>1</sup>, Fernandes MEF<sup>2</sup>, Val DR<sup>3</sup>, Freitas AR<sup>4</sup>, Lemos JC<sup>5</sup>, Pereira KMA<sup>4</sup>, Rodrigues JAG<sup>1</sup>, Araújo IWF<sup>6</sup>, Bezerra MM<sup>5</sup>,

Chaves HV<sup>4</sup>, Benevides NMB<sup>1</sup> <sup>1</sup>UFC – Bioquímica e Biologia Molecular, <sup>2</sup>UFC – Odontologia, <sup>3</sup>RENORBIO-UFPE, <sup>4</sup>UFC-Sobral – Odontologia, <sup>5</sup>UFC-Sobral – Medicina, <sup>6</sup>UFC – Engenharia de Pesca

**09.086 Antispasmodic activity of crude ethanolic extract from *Xylopi frutescens* Aubl. aerial parts on guinea pig ileum.** Moreno GTA<sup>1</sup>, Ferreira SRD<sup>1</sup>, Oliveira FRMB<sup>1</sup>, Vasconcelos LHC<sup>2</sup>, Correia ACC<sup>3</sup>, Silva MS<sup>2,4</sup>, Tavares JF<sup>2,4</sup>, Cavalcante FA<sup>2,5</sup> <sup>1</sup>UFPB, <sup>2</sup>UFPB, <sup>3</sup>ICBS-UFAL, <sup>4</sup>DCF-UFPB, <sup>5</sup>DFP-UFPB

**09.087 *Hypericum perforatum* inhibits inflammatory pain in mice.** Mizokami SS<sup>1</sup>, Staurengo-Ferrari L<sup>1</sup>, Fattori V<sup>1</sup>, Colombo BB<sup>1</sup>, Casagrande R<sup>2</sup>, Verri WA<sup>1</sup> – <sup>1</sup>UEL – Ciências Patológicas, <sup>2</sup>UEL – Ciências Farmacêuticas

**09.088 Hepatoprotective effect of the aqueous extract of *Simarouba amara* Aublet (Simaroubaceae) stem bark against carbon tetrachloride (CCL4) – induced hepatic damage in rats.** Maranhão HML<sup>1</sup>, Martins AOBPB<sup>1</sup>, Vasconcelos CFB<sup>1</sup>, Rolim LA<sup>1</sup>, Silva-Neto JC<sup>2</sup>, Silva Filho RC<sup>3</sup>, Costa-Silva JH<sup>3</sup>, Fernandes MP<sup>3</sup>, Araújo AV<sup>4</sup>, Wanderley AG<sup>1,5</sup> <sup>1</sup>UFPE – pharmaceutical Sciences, <sup>2</sup>UFPE – Histology and Embryology, <sup>3</sup>CAV-UFPE – Physical Education and Sports, <sup>4</sup>CAV-UFPE – Nutrition, <sup>5</sup>UFPE – Physiology and Pharmacology

**09.089 *In vitro* antioxidant activity of a semisynthetic derivative of the natural riparins.** Araújo EJF<sup>1</sup>, Oliveira JS<sup>1</sup>, Lima FCA<sup>2</sup>, Freitas RM<sup>1</sup>, Gutierrez SJC<sup>1</sup> <sup>1</sup>UFPI, <sup>2</sup>UESPI

**09.090 Role of the ethyl acetate fraction of *Platonia insignis* Mart. in NO-synthase and lipid peroxidation in gastric lesions induced by absolute ethanol.** Lima GS<sup>1</sup>, Oliveira IS<sup>1</sup>, Silva-Freitas FV<sup>1</sup>, Lira KL<sup>1</sup>,

Nicolau LAD<sup>1</sup>, Nunes PHM<sup>2</sup>, Chaves MH<sup>3</sup>, Medeiros JVR<sup>1</sup>, Oliveira RCM<sup>1,2</sup> <sup>1</sup>NPPM-UFPI, <sup>2</sup>UFPI – Biophysics and Physiology, <sup>3</sup>UFPI – Department of Chemistry

**09.091 *In vitro* antioxidant capacity of a new ester phenylpropanoid.** Machado KC<sup>1</sup>, Oliveira GLS<sup>1</sup>, Sousa EBVS<sup>2</sup>, Sousa EBVS<sup>2</sup>, Machado KC<sup>1</sup>, Sousa DP<sup>2</sup>, Freitas RM<sup>1</sup> <sup>1</sup>UFPI, <sup>2</sup>UFPB

**09.092 Parameters of quality and identity of geoprópolis of *Melipona fasciculata* Smith.** Rocha AO, Ferreira FS, Serra MB, Mesquita LSS, Mesquita JWC, Cunha MS, Batista MC, Dutra RP, Ribeiro MNS UFMA

**09.093 Antioxidant potential of *Passiflora edulis*.** Ferreira FS, Mesquita LSS, Rocha AO, Mesquita JWC, Serra MB, Cunha MS, Batista MC, Dutra RP, Ribeiro MNS UFMA

**09.094 Effects of synthetic natriuretic peptide of *Crotalus durissus cascavella* venom in isolated perfused rat kidney system.** Silveira JAM<sup>1</sup>, Marinho AD<sup>1</sup>, Jorge ARC<sup>1</sup>, Costa PPC<sup>1</sup>, Jorge RJB<sup>1</sup>, Morais GB<sup>2</sup>, Evangelista JSAM<sup>2</sup>, Monteiro HSA<sup>1</sup> – <sup>1</sup>LAFAVET-UFC – Physiology and Pharmacology, <sup>2</sup>UFC-HISTOVESP – Veterinary

**09.095 Vasodilatory activity and mechanism of action of the ethanolic extract and fractions of aerial parts of *Stachytarpheta schottiana* (Verbenaceae).** Moreira AP, Moura GR, Muzitano MF, Barros CM, Carmo PL, Raimundo JM UFRJ-Macacé

**09.096 Snake venom PLA<sub>2</sub> activity inhibition by different protocols on neuromuscular junction.** Schezaro-Ramos R<sup>1</sup>, Collaço RCO<sup>1</sup>, Randazzo-Moura P<sup>2</sup>, Cogo JC<sup>3</sup>, Rodrigues-Simioni L<sup>1</sup> <sup>1</sup>FCM-Unicamp – Farmacologia, <sup>2</sup>PUC-SP – Farmacologia, <sup>3</sup>UniVaP – Estudos da Natureza

**09.097 Involvement of monoaminergic system in the antidepressive-like effect of**

chloroformic fraction of *Lafoensia pacari* A. ST.-HIL. ethanolic extract. Galdino PM<sup>1,2</sup>, Carvalho AAV<sup>1</sup>, Florentino IF<sup>1</sup>, Martins JLR<sup>1</sup>, Rodrigues ORL<sup>1</sup>, Gazola AC<sup>3</sup>, Reginatto FH<sup>3</sup>, Paula JR<sup>4</sup>, Torres LMB<sup>5</sup>, Costa EA<sup>1</sup>, de Lima TCM<sup>2</sup> <sup>1</sup>ICB-UFG – Farmacologia de Produtos Naturais, <sup>2</sup>CCB-UFSC – Farmacologia, <sup>3</sup>CCS-UFCS – Ciências Farmacêuticas, <sup>4</sup>FF-UFG – Produtos Naturais, <sup>5</sup>IBot

**09.098** Effects of *Morus nigra* (mulberry) leaves tea on arterial blood pressure in adult rats. Rodrigues BB<sup>1</sup>, Oliveira RE<sup>1</sup>, Araujo-Alves MA<sup>1</sup>, Silva MTB<sup>2</sup>, de Andrade CR<sup>1</sup> – <sup>1</sup>INTA-NUBEM – Bioprospecção e Experimentação Molecular Aplicada, <sup>2</sup>CCS-UFPI – Educação Física

**09.099** Biochemical characterization of a PLA<sub>2</sub> Btae TX-I isolated from *Bothrops taeniata* snake venom: A pharmacological and morphological study. Romero-Vargas FF<sup>1</sup>, Rocha T<sup>2</sup>, Cruz-Höfling MA<sup>3</sup>, Rodrigues-Simioni L<sup>4</sup>, Marangoni S<sup>1</sup> <sup>1</sup>Unicamp – Biochemistry, <sup>2</sup>San Francisco University – Multidisciplinary Research Laboratory, <sup>3</sup>Unicamp – Histology and Embryology, <sup>4</sup>Unicamp – Pharmacology

**09.100** Proteolytic fraction FROM *Vasconcellea cundinamarcensis* latex stimulates the bone neoformation probably involving the proliferation and differentiation of osteoblasts. Santos VG<sup>1</sup>, Braga AD<sup>1</sup>, Reis IDG<sup>2</sup>, Freitas KM<sup>1</sup>, Salas CE<sup>3</sup>, Silva GAB<sup>2</sup>, Lopes MTP<sup>1</sup> <sup>1</sup>UFMG – Pharmacology, <sup>2</sup>UFMG – Morphology, <sup>3</sup>UFMG – Biochemistry and Immunology

**09.101** Effect of the extract of *Euterpe oleracea* Mart. (Açaí) on cardiovascular and renal disorders in animals with spontaneous hypertension (SHR) associated with Diabetes Mellitus Type 1. Cordeiro VSC<sup>1</sup>, Carvalho LCRM<sup>1</sup>, Costa CA<sup>1</sup>, Bem GF<sup>1</sup>, Santos IB<sup>1</sup>, Oliveira PRB<sup>1</sup>, Okinga A<sup>1</sup>, Souza MAV<sup>1</sup>, Sousa JP<sup>2</sup>, Soares de Moura R<sup>1</sup>, Resende AC<sup>1</sup> <sup>1</sup>UERJ

– Cardiovascular Pharmacology and Medicinal Plants, <sup>2</sup>UFPA – Pharmacy

**09.102** Evaluation of the acute toxicity of essential oil from the leaves of *Tagetes minuta* L. in silver catfish (*Rhamdia quelen*). Oliveira AM<sup>1</sup>, Cunha JA<sup>2</sup>, Sutili FJ<sup>2</sup>, Pinheiro CG<sup>3</sup>, Garlet QI<sup>2</sup>, Baldissierotto B<sup>2</sup>, Heinzmann B<sup>2</sup> <sup>1</sup>CCS-UFMS – Farmácia, <sup>2</sup>CCS-UFMS – Farmacologia, <sup>3</sup>UFMS – Engenharia Florestal

**09.103** Safety and efficacy of the lectin from *Mucuna pruriens* (Mp) seeds on free radicals and oxidative stress on ethanol-induced gastropathy in mice. Maciel LM<sup>1</sup>, Pinto IR<sup>2</sup>, Assis EL<sup>3</sup>, Matos SO<sup>3</sup>, Pereira Filho SM<sup>1</sup>, Monteiro DAM<sup>3</sup>, Ribeiro KA<sup>2</sup>, Chaves HV<sup>3,4</sup>, Gadelha TS<sup>5</sup>, Gadelha CAA<sup>5</sup>, Lacerda JTJG<sup>5</sup>, Viana AFSC<sup>6</sup>, Vasconcelos AS<sup>6</sup>, Sousa FCF<sup>6</sup>, Pinto VP<sup>1,2,4</sup>, Cristino Filho G<sup>1</sup>, Aguiar LMV<sup>1,2,7</sup>, Bezerra MM<sup>1,2,4</sup>, Silva AAR<sup>3,2</sup> <sup>1</sup>UFC-Sobral – Medicine, <sup>2</sup>UFC – Biotechnology, <sup>3</sup>UFC-Sobral – Dentistry, <sup>4</sup>UFC – Health Sciences, <sup>5</sup>UFPB – Molecular Biology, <sup>6</sup>UFC – Pharmacology, <sup>7</sup>UFC

**09.104** Effect of polysaccharides plant extracts against epimastigote forms of *Trypanosoma cruzi*. Souza ROS<sup>1</sup>, Sousa PL<sup>1</sup>, Menezes RRPPB<sup>1</sup>, Pereira MG<sup>2</sup>, Martins AMC<sup>1</sup> <sup>1</sup>FF-UFC – Cultivo Celular, <sup>2</sup>ISCB-UECE

## 11. Clinical Pharmacology, Pharmacokinetics, Pharmacogenomics and Preclinical Toxicology

**11.001** Effect of standardized extract of propolis (EPP-AF) on the *in vivo* activity of P-glycoprotein: clinical study in healthy volunteers.

Vale GT<sup>1</sup>, Lanchote VL<sup>2</sup>, Coelho EB<sup>3</sup> <sup>1</sup>FMRP – Farmacologia, <sup>2</sup>FCFRP-USP – Toxicologia, <sup>3</sup>FMRP – Clínica Médica

**11.002 Bacteria drug resistance in intensive care units: a systematic review.** Luedy TA, Costa LS, Rodrigues CDM, Lima ISP, Júnior AGT, Lima MAP, Meireles CB, Linhares EHPCM, Simplício GN, Costa TR, Ferreira LFP UFCA

**11.003 Biochemical and hematological effects of acute administration to crude fraction from the leaves of *Celtis iguanaea* in female rats.** Guex CG<sup>1</sup>, Silva ARH<sup>1</sup>, Noda JM<sup>1</sup>, Pigatto GR<sup>1</sup>, Rovani BT<sup>1</sup>, Freitas RB<sup>2</sup>, Froeder ALF<sup>2</sup>, Athayde ML<sup>2</sup>, Bauermann LF<sup>1</sup> <sup>1</sup>UFMS – Fisiologia e Farmacologia, <sup>2</sup>UFMS – Farmácia Industrial

**11.004 Preclinical toxicological test for *Marrubium vulgare* on weaned calves.** Schlemper V, Bernardo FD, Schlemper SRM, Franciscato C, Ambrosini F, Barichello D, Soares EL UFFS – Medicina Veterinária

**11.005 Juvenile Arthritis Rheumatoid therapeutics: A review of the last decade.** Meireles CB, Simplício GN, Linhares EHPCM, Luedy TA, Costa TR, Ferreira LFP, Rodrigues CDM, Costa LS, Lima ISP, Júnior AGT UFCA

**11.006 Evaluation of acute toxicity of CeO<sub>2</sub> nanoparticles in mice.** Beltrão DM<sup>1</sup>, Xavier AL<sup>1</sup>, Abrantes RA<sup>1</sup>, Santos CCL<sup>2</sup>, Keyson D<sup>2</sup>, Sousa AG<sup>2</sup>, Farias IAP<sup>3</sup>, Albuquerque AJR<sup>3</sup>, Sampaio FC<sup>3</sup>, Sobral MV<sup>1</sup> <sup>1</sup>UFPB – Ciências Farmacêuticas, <sup>2</sup>UFPB – Química, <sup>3</sup>UFPB – Biotecnologia

**11.007 Pharmacogenetic and pharmacogenomic effect of ala16val polymorphism – SOD2 cytotoxicity caused by methotrexate in human peripheral blood mononuclear cells (PBMCs).** Machado AK<sup>1</sup>, Barbisan F<sup>1</sup>, Motta JR<sup>2</sup>, Rogalski F<sup>2</sup>, Teixeira C<sup>2</sup>, Jung I<sup>1</sup>, Dornelles E<sup>3</sup>, Cruz IBM<sup>2</sup> <sup>1</sup>UFMS – Pharmacology, <sup>2</sup>UFMS – Biogenomics, <sup>3</sup>UFMS – Toxicological Biochemistry

**11.008 Evaluation of rabbit vaginal permeability test applied to fenticonazole.** Campos RM<sup>1</sup>, Pissinati L<sup>1</sup>, Rojas-Muscoso JA<sup>1</sup>, Chen LS<sup>2</sup>, Porto M<sup>1</sup>, Gagliano TJD<sup>3</sup>, De Nucci G<sup>1</sup> <sup>1</sup>Unicamp – Pharmacology, <sup>2</sup>Galeno Research Unit, <sup>3</sup>BCCF-UFRJ

**11.009 Correlations among antiangiogenic factors and trace elements in hypertensive disorders of pregnancy.** Rezende V, Palei AC, Barbosa Jr F, Tanus-Santos JE, Sandrim V FMRP-USP – Farmacologia

**11.010 Toxic effects of OMC administration during development of rats in lactational period.** Barbosa E<sup>1</sup>, Savignon T<sup>2</sup>, Ferraris FK<sup>1</sup>, Chaves AS<sup>1</sup>, Muylaert FF<sup>1</sup>, Rodrigues SA<sup>1</sup>, Amendoeira FC<sup>1</sup> <sup>1</sup>INCQS-DFT-Fiocruz – Farmacologia, <sup>2</sup>INCQS-DFT-Fiocruz – Fisiopatologia

**11.011 Does omeprazole association modulate digoxin pharmacokinetic in patients with heart failure?** Souza FC, Barros RBM, Rocha RG, Baptista TM, Silva TA, Scaramello CBV UFF

**11.012 Evaluation of streptokinase in biopharmaceutical formulations by *in vitro* bioassays.** Cardoso Jr CDA<sup>1</sup>, Schramm VG<sup>1</sup>, Freitas GW<sup>1</sup>, Walter ME<sup>1</sup>, Xavier B<sup>2</sup>, Dalmora SL<sup>1</sup> <sup>1</sup>UFMS – Ciências Farmacêuticas, <sup>2</sup>UFMS – Farmácia

**11.013 Haloperidol-loaded polymeric nanocapsules prevents hepatotoxicity and DNA damage in rats.** Roversi Kr<sup>1</sup>, Benvegnú DM<sup>2</sup>, Burger ME<sup>1</sup> <sup>1</sup>UFMS – Fisiologia e Farmacologia, <sup>2</sup>UFFS – Bioquímica e Farmacologia

**11.014 Inosine prevents MeHg induced neurotoxicity, hepatotoxicity and dyslipidemia in mice.** Macedo-Júnior SJ<sup>1</sup>, Durli-Júnior I<sup>2</sup>, Santos ARS<sup>3</sup>, Cardozo AM<sup>4</sup> <sup>1</sup>UFSC – Farmacologia, <sup>2</sup>Petlabor – Análises Clínicas Veterinárias, <sup>3</sup>UFSC – Ciências Fisiológicas, <sup>4</sup>UFSC – Patologia

**11.015 Non-clinical toxicity and evaluation of the gastroprotective effect of**



**bioproducts from *Psychotria carrascoana*.**

Almeida AC<sup>1</sup>, Freitas LBN<sup>1</sup>, Pierdoná TM<sup>2</sup>,  
Filho JMSR<sup>1</sup>, Nascimento RRG<sup>3</sup>, Pimenta  
ATA<sup>3</sup>, Lima MAS<sup>1</sup>, Leal LKAM<sup>1</sup> <sup>1</sup>UFC –  
Farmácia, <sup>2</sup>UFC – Fisiologia e  
Farmacologia, <sup>3</sup>UFC – Química Orgânica e  
Inorgânica



**02. Neuroparmacology**

**02.041** **Intranigral 6-hydroxydopamine and intraperitoneal rotenone exposures cause hypolocomotion and anxiolytic-like effect in male Wistar rats.** Vieira JCF, Bassani TB, Zanoveli JM, Vital MABF UFPR – Farmacologia

**02.042** **The effects of a single acute dose of carvacrol on monoamine levels in mice striatum.** Melo FHC<sup>1</sup>, Fernandes ML<sup>1</sup>, Citó MCO<sup>1</sup>, Santos LKX<sup>1</sup>, Fernandes CEL<sup>2</sup>, Sousa FCF<sup>1</sup>, Aguiar JAC<sup>1</sup>, Lopes IS<sup>1</sup> <sup>1</sup>UFC – Fisiologia e Farmacologia, <sup>2</sup>UECE – Ciências Biológicas

**02.043** **Acute postnatal administration of methylmalonate provokes memory deficit in mice: involvement of inflammatory and apoptotic markers.** Funghetto MP<sup>1</sup>, Gabbi P<sup>2</sup>, Ribeiro LR<sup>2</sup>, Cardoso AS<sup>1</sup>, Haupental F<sup>1</sup>, Figuera M R<sup>3</sup> <sup>1</sup>UFSM – Bioquímica do Exercício, <sup>2</sup>UFSM – Farmacologia, <sup>3</sup>UFSM – Neuropsiquiatria

**02.044** **Repeated intranasal administration of the fungicide Ziram induces motor deficits in adult mice: support for the olfactory vector hypothesis of Parkinson's disease.** Mack JM<sup>1</sup>, Schmitz AE<sup>2</sup>, Scarpa P<sup>1</sup>, Souza LF<sup>2</sup>, Dafre AL<sup>2</sup>, Prediger RDS<sup>1</sup> <sup>1</sup>UFSC – Farmacologia, <sup>2</sup>UFSC – Bioquímica

**02.045** **Tactile stimulation and neonatal isolation modify oxidative status during cocaine abstinence in young rats.** Antoniazzi CTD, Roversi Kr, Dias VT, Bürger ME UFSM – Fisiologia e Farmacologia

**02.046** **Chronic ethanol intoxication exacerbates the losses generated by cerebral ischemia.** Fontes-Júnior EA<sup>1</sup>, Oliveira GB<sup>1</sup>, Fernandes LMP<sup>1</sup>, Leal WG<sup>2</sup>, Rodrigues Lima R<sup>2</sup>, Maia CSF<sup>1</sup>, Crespo-

Lopez ME<sup>2</sup> <sup>1</sup>UFPA – Farmácia, <sup>2</sup>UFPA – Ciências Biológicas

**02.047** **Control of breathing automaticity by activation of the retrotrapezoid nucleus/parafacial region in adult anesthetized rats.** Lucena EV<sup>1</sup>, Takakura AC<sup>2</sup>, Moreira TS<sup>1</sup> <sup>1</sup>USP – Physiology and Biophysics, <sup>2</sup>USP – Pharmacology

**02.048** **Antidepressant like activity of citronellyl acetate in mice: involvement of noradrenergic and serotonergic system.** Santos LKX, Citó MCO, Fernandes ML, Melo FHC, Aguiar JAC, Sousa PB, Lopes IS, Santos APX, Sousa FCF UFC – Pharmacology and Physiology

**02.049** **7-fluoro-1,3-diphenylisoquinoline reverses motor and non-motor symptoms induced by MPTP in mice: Role of neuroinflammation.** Sampaio TB<sup>1</sup>, Sari MHM<sup>2</sup>, Pesarico AP<sup>2</sup>, Mantovani A<sup>2</sup>, Prediger RD<sup>1</sup>, Nogueira CW<sup>2</sup> <sup>1</sup>UFSC – Pharmacology, <sup>2</sup>UFSM – Chemistry

**02.050** **Antidepressant-like effects of piroxicam in the rat forced swim test are associated with serotonin.** Santiago RM<sup>1</sup>, Bassani TB<sup>1</sup>, Zaminelli T<sup>1</sup>, Boschen S<sup>1</sup>, Lima MMS<sup>2</sup>, Da Cunha C<sup>1</sup>, Andreatini R<sup>1</sup>, Vital MABF<sup>1</sup> <sup>1</sup>UFPR – Farmacologia, <sup>2</sup>UFPR – Fisiologia

**02.051** **Neuroanatomical evidences of the control of expiratory activity by the retrotrapezoid nucleus.** Silva JN<sup>1</sup>, Moreira TS<sup>2</sup>, Takakura AC<sup>1</sup> <sup>1</sup>USP – Farmacologia, <sup>2</sup>USP – Fisiologia

**02.052** **Noradrenergic degeneration contributes to the rapid onset of L-DOPA induced dyskinesia in rats.** Lopes SC<sup>1</sup>, Oliveira PA<sup>1</sup>, Lopes MW<sup>2</sup>, Leal RB<sup>2</sup>, Takahashi RN<sup>1</sup>, Prediger RD<sup>1</sup> <sup>1</sup>UFSC – Farmacologia, <sup>2</sup>UFSC – Bioquímica

**02.053** Bed nucleus of the stria terminalis noradrenergic system modulates contextual fear conditioning: involvement of CRF1 receptors and NMDA-NO pathway. Hott SC, Gomes FV, Uliana DLM, Resstel LBM FMRP-USP – Pharmacology

**02.054** Protective effect of riparin III on oxidative stress in a corticosterone-induced stress model in mice. Capibaribe VCC, Vasconcelos AS, Oliveira ICM, Vidal LMT<sup>1</sup>, Pontes MCD, Castro LA, Lopes IS, Sousa PB, Lima AEL, Sousa FCF UFC – Fisiologia e Farmacologia

**02.055** Investigation of the effect of meropenem in astrocyte culture. Lima CNC<sup>1</sup>, Venancio ET<sup>1</sup>, Filho AJMC<sup>1</sup>, Feitosa ML<sup>1</sup>, Lopes KS<sup>2</sup>, Sousa A<sup>1</sup>, Lima KA<sup>1</sup>, Macedo DS<sup>1</sup>, Martins AMC<sup>2</sup>, Fonteles MMF<sup>1,2</sup> <sup>1</sup>UFC – Farmacologia e Fisiologia, <sup>2</sup>UFC – Farmácia

**02.056** Evaluation of sedative, anxiolytic, and anticonvulsant activity of the essential oil of *Piper tuberculatum* in mice. Rodrigues CKS<sup>1</sup>, Sales VS<sup>1</sup>, Figueirêdo FRSDN<sup>1</sup>, Nascimento EP<sup>1</sup>, Delmondes GA<sup>1</sup>, Cruz LP<sup>1</sup>, Tintino SR<sup>1</sup>, Silva RER<sup>1</sup>, Amaro EN<sup>1</sup>, Rodrigues LB<sup>1</sup>, Monteiro AB<sup>1</sup>, Cesário FRAS<sup>1</sup>, Lemos ICS<sup>1</sup>, Menezes IRA<sup>1</sup>, Barbosa R<sup>1</sup>, Felipe CFB<sup>2</sup>, Kerntopf MR<sup>1</sup> <sup>1</sup>URCA – Biological Chemistry <sup>2</sup>UFPB – Molecular Biology

**02.057** Gene expression of myoinositol co-transporters in nervous tissue during the development of experimental diabetes. Uchoa PN<sup>1</sup>, Fonteles MC<sup>1</sup>, Nascimento NRF<sup>1</sup>, Santos CF<sup>1</sup>, Bindá AH<sup>2</sup>, Farias VX<sup>1</sup>, Prata MMG<sup>2</sup>, Britto LRG<sup>3</sup>, Lessa LMA<sup>1</sup> <sup>1</sup>ISCB-UECE, <sup>2</sup>UFC – Fisiologia e Farmacologia, <sup>3</sup>ICB-USP

**02.058** Anxiolytic-like effects of liposomal formulation containing nimodipine: possible involvement of serotonergic transmission. Viana HKMMV<sup>1</sup>, Almeida VPA<sup>1</sup>, Rodrigues JBR<sup>1</sup>, Moreno LCGAI<sup>2</sup>,

Santos-Magalhães NS<sup>2</sup>, Freitas RM<sup>1</sup>, Rolim HML<sup>1</sup> <sup>1</sup>UFPI, <sup>2</sup>UFPE

**02.059** Involvement of dopaminergic system in antidepressant like activity of monoterpene citronellyl acetate. Silva FCC, Santos LKX, Citó MCO, Fernandes ML, Melo FHC, Sousa FCF UFC – Fisiologia e Farmacologia

### 03. Psychopharmacology

**03.001** N-acetylcysteine prevents alcohol withdrawal-induced increases in corticosterone and leptin in rats. Schneider RJ<sup>1</sup>, Santos CF<sup>2</sup>, Clarimundo V<sup>2</sup>, Dalmaz C<sup>3,1</sup>, Elisabetsky E<sup>2,1</sup>, Gomez R<sup>2,1</sup> <sup>1</sup>UFRGS – Neurociências, <sup>2</sup>UFRGS – Farmacologia, <sup>3</sup>UFRGS – Bioquímica

**03.002** Acute treatment with the cathinone derivative methedrone produces marked behavioral and biochemical changes in mice. Pail PB<sup>1</sup>, Costa KM<sup>2</sup>, Leite CE<sup>3</sup>, Campos MM<sup>4</sup> <sup>1</sup>PUCRS – Cellular and Molecular Biology, <sup>2</sup>PUCRS – Medicine and Health Sciences, <sup>3</sup>INTOX-PUCRS, <sup>4</sup>PUCRS – Dentistry

**03.003** Extinction of cocaine-induced conditioned place preference: Temporal characterization. Oliveira-Lima AJ<sup>1</sup>, Marinho EAV<sup>1</sup>, Malpezzi Marinho ELA<sup>2</sup>, Jesus PF<sup>3</sup>, Hollais AW<sup>3</sup>, Aramini TCF<sup>3</sup>, Santo R<sup>3</sup>, Berro LF<sup>4</sup>, Oliveira LC<sup>3</sup>, Yokoyama TS<sup>3</sup>, Wuo-Silva R<sup>3</sup>, Patti CL<sup>3</sup>, Frussa-Filho R<sup>3</sup> <sup>1</sup>UESC – Ciências da Saúde, <sup>2</sup>UESC – Ciências Biológicas, <sup>3</sup>Unifesp – Farmacologia, <sup>4</sup>Unifesp – Psicofarmacologia

**03.004** Antidepressant-like effect of the extract of *Cecropia obtusa* in mice: Involvement of the monoaminergic system. Schöffner AP<sup>1</sup>, Veroneze MH<sup>2</sup>, Girardi BA<sup>1</sup>, Rubin MA<sup>1</sup> – <sup>1</sup>UFMS – Farmacologia, <sup>2</sup>UFMS – Bioquímica Toxicológica

**03.005** Arcaine impairs the consolidation and expression of morphine-induced conditioned place preference in mice.

Rubin MA, Tomazi L, Schoffer AP, Girardi BA, Mello CF UFSM – Pharmacology

**03.006** Anxiolytic effects of cannabidiol administration into the medial infralimbic prefrontal cortex of rats tested in the elevated plus-maze. Marinho ALZ<sup>1</sup>, Vila-Verde C<sup>1</sup>, Guimarães FS<sup>1</sup> <sup>1</sup>FMRP-USP – Pharmacology

**03.007** HU-474, a cannabidiol analogue, attenuates prepulse inhibition impairment induced by MK-801 in mice. Silva NR<sup>1</sup>, Gomes FV<sup>1</sup>, Pedrazzi JFC<sup>2</sup>, Del Bel EA<sup>3</sup>, Mechoulam R<sup>4</sup>, Zuardi AW<sup>2</sup>, Crippa JAS<sup>2</sup>, Hallak JEC<sup>2</sup>, Guimarães FS<sup>1</sup> <sup>1</sup>USP – Pharmacology, <sup>2</sup>USP – Neurosciences and Behavioral Sciences, <sup>3</sup>USP – Morphology, Physiology and Stomatology, <sup>4</sup>HUJI – Medicinal Chemistry and Natural Products

**03.008** Role of neuronal nitric oxide synthase neurons located in the medial prefrontal cortex on restraint-induced long lasting anxiety in rats. Vila-Verde C, Marinho ALZ, Sonogo AB, Guimarães FS FMRP-USP – Pharmacology

**03.009** Effects of *Euterpe oleracea* Mart. (acai frozen pulp) subchronic administration on elevated plus maze behavior testing in Wistar male rats. Kuo J<sup>1</sup>, Machado FS<sup>1</sup>, Wohlenberg MF<sup>1</sup>, Fruscante M<sup>1</sup>, Oliveira AS<sup>1</sup>, Kneib L<sup>1</sup>, Hilger D<sup>1</sup>, Medeiros N<sup>1</sup>, Dani C<sup>1</sup>, Salvador M<sup>2</sup>, Funchal CS<sup>1</sup> <sup>1</sup>IPA, <sup>2</sup>UCS – Biotechnology

**03.010** Evaluation of the effects of intra-dorsal periaqueductal gray administration of dolasetron in the elevated plus-maze and forced swimming test in rats. Garcia JB, Guimarães RAM, Gavioli EC, Soares-Rachetti VP UFRN – Biophysics and Pharmacology

**03.011** Antinociceptive activity of two analogues structural eugenol. Fonseca DV<sup>1</sup>, Salgado PRR<sup>1</sup>, Muniz VM, Santos AKFS, La Rocca V, Carvalho FL, Salvadori

MGSS, Barbosa Filho JM, Almeida RN CCS-UFPB

**03.012** Activation of CB1 receptor in dorsomedial hypothalamus (DMH) induces antiaversive effect in rats. Bastos JR<sup>1</sup>, Viana TG<sup>2</sup>, Aguiar DC<sup>2</sup>, Moreira FA<sup>2</sup> <sup>1</sup>UFMG – Neurociências, <sup>2</sup>UFMG – Farmacologia

**03.013** Effects of ayahuasca on the development of ethanol-induced behavioral sensitization and on a counter-conditioning strategy in mice. Marinho EAV<sup>1</sup>, Oliveira-Lima AJ<sup>1</sup>, Santos R<sup>2</sup>, Hollais AW<sup>2</sup>, Wuo-Silva R<sup>2</sup>, Yokoyama TS<sup>3</sup>, Malpezzi-Marinho ELA<sup>4</sup>, Ribeiro-Barbosa PC<sup>5</sup>, Berro LF<sup>6</sup>, Frussa-Filho R<sup>2</sup> <sup>1</sup>UESC – Ciências da Saúde, <sup>2</sup>Unifesp – Farmacologia, <sup>3</sup>Unifesp – Fisiologia, <sup>4</sup>UESC – Ciências Biológicas, <sup>5</sup>UESC – Filosofia e Ciências Humanas, <sup>6</sup>Unifesp – Psicobiologia

**03.014** Evaluation of the effect of pregabalin on anxiety-like behaviors in female rats. Souza AF, Mendes CRM, Soares-Rachetti VP, Gavioli EC UFRN – Biofísica e Farmacologia

**03.015** Reciprocal roles for CB1 and CB2 cannabinoid receptors in cocaine-induced hyperlocomotion. Gobira PH, Moreira FA UFMG – Farmacologia

**03.016** Involvement of alpha-1B-adrenoceptors in the anti-immobility effects of imipramine in the tail suspension test. Ribeiro ASR, Pupo AS IBB-Unesp-Botucatu – Pharmacology

**03.017** 5-HT<sub>2C</sub> receptors of the dorsal periaqueductal gray and the anxiety-modulating effects of antidepressant drugs. Costa HHV<sup>1</sup>, Vicente MA<sup>2</sup>, Casarotto PC<sup>1</sup>, Zangrossi HJR<sup>1</sup> <sup>1</sup>FMRP-USP, <sup>2</sup>FCFar-Unesp

**03.018** Arachidonoyl serotonin, a dual blocker of fatty acid amide hydrolase and transient receptor potential vanilloid type-1 channels, reduces the expression of

**contextual fear conditioning via CB1 receptors.** Oliveira AC, Gobira PH, Moreira FA UFMG – Pharmacology

**03.019 Effects of resveratrol on fluphenazine-induced vacuous chewing movements in male and female rats.** Busanello A<sup>1</sup>, Freitas CM<sup>2</sup>, Leal CQ<sup>3</sup>, Bressan GN<sup>3</sup>, Barbosa CP<sup>3</sup>, Krum BN<sup>3</sup>, Reis EM<sup>1</sup>, Barbosa NVB<sup>2</sup>, Fachinetto R<sup>1</sup> <sup>1</sup>UFMS – Farmacologia, <sup>2</sup>UFMS – Bioquímica Toxicológica, <sup>3</sup>UFMS – Farmácia

**03.020 Antidepressant-like effect of *Croton zehntneri* essential oil (OECz) in mice.** Custódio FR, Oliveira PLN, Liberato FR, Melo CTV NUBEM-INTA

**03.021 Analysis of prescriptions with potential drug interactions in Hospital of Pediatrics Professor Heriberto Ferreira Bezerra (HOSPED), Natal RN.** Pinto MNDS<sup>1</sup>, Carvalho MDS<sup>1</sup>, Cabral CHK<sup>2</sup> <sup>1</sup>DBF-UFRN – Biophysics and Pharmacology, <sup>2</sup>HOSPED-UFRN

**03.022 Investigation of behavioral changes of pentoxifylline in rats.** Garantizado CR<sup>1</sup>, Cavalcante ALC<sup>2</sup>, Lima FAVL<sup>3</sup>, Calou IBF<sup>4</sup>, Siqueira RMP<sup>1</sup> <sup>1</sup>FAMETRO – Farmácia, <sup>2</sup>UNIFOR – Medicina, <sup>3</sup>UFC – Farmacologia, <sup>4</sup>UFPI

#### 04. Inflammation

**04.083 Obesity increases CD16 expression in monocytes: The role of adipose tissue secreted molecules.** Martins MR<sup>1</sup>, Matheus ME<sup>2</sup>, Andrade IR<sup>1</sup>, Silva SV<sup>1</sup>, Reis MC<sup>1</sup>, Souza AAP<sup>2</sup>, Silva CC<sup>2</sup>, Bouskela E<sup>1</sup>, Barja-Fidalgo TC<sup>1</sup> <sup>1</sup>UERJ, <sup>2</sup>UFRJ

**04.084 Differential effect of lidocaine on acute and late phases of silicosis in mice.** Lacerda L, Ciambarella BT, Ferreira TPT, Martins MA, Silva PMR Fiocruz – Farmacodinâmica

**04.085 Platelet-activating factor receptor deficient mice develop more severe experimental colitis.** Lima R L<sup>1</sup>, Arifa RDN<sup>1</sup>, Menezes-Garcia Z<sup>1</sup>, Brito CB<sup>1</sup>, Dourado

LPA<sup>1</sup>, Teixeira M M<sup>2</sup>, Souza D G<sup>1</sup> – <sup>1</sup>ICB-UFMG – Microbiologia, <sup>2</sup>ICB-UFMG – Imunologia e Bioquímica

**04.086 Gedunin impairs toll-like receptor 4/MD-2 signaling.** Borges P<sup>1</sup>, Moret K<sup>1</sup>, Monteiro C<sup>2</sup>, Batista P<sup>3</sup>, Caffarena E<sup>3</sup>, Henriques MG<sup>1</sup>, Penido C<sup>1</sup> <sup>1</sup>Farmanguinhos-Fiocruz – Farmacologia Aplicada, <sup>2</sup>IOC-Fiocruz – Imunofarmacologia; <sup>3</sup>Fiocruz – Biofísica Computacional e Modelagem Molecular, <sup>4</sup>Fiocruz – Farmacologia Aplicada

**04.087 Role of nitric oxide in hypoxia signaling during colonic inflammation.** Caria CRP, Moscato CH, Tomé RBG, Pedrazzoli Jr J, Rocha T, Ribeiro ML, Gambero A USF – Clinical Pharmacology and Gastroenterology

**04.088 Proteinase-activated receptor (PAR)-2 plays a role in the recruitment of leukocytes in experimental lung inflammation.** Matos NA, Klein A ICB-UFMG – Farmacologia

**04.089 Effect of low level laser therapy combined with physical training in experimental arthritis.** Silva MP, Sanches IC, Angelis KD, Zamuner SR Uninove – Rehabilitation Sciences

**04.090 Non-clinical evaluation of anti-inflammatory activity and toxicity of standardized dry extract and fractions from *Amburana cearensis* (Cumaru).** Amaral HHS<sup>1</sup>, Pierdoná TM<sup>2</sup>, Araujo EVO<sup>1</sup>, RIBEIRO RG<sup>3</sup>, Santos GBM<sup>3</sup>, Silveira ER<sup>3</sup>, Viana GSB<sup>2</sup>, Leal LKAM<sup>1</sup> <sup>1</sup>CEFAC-UFC – Farmácia, <sup>2</sup>UFC – Fisiologia e Farmacologia, <sup>3</sup>UFC – Química Orgânica e Inorgânica

**04.091 Role of enzyme 5-lipoxygenase in experimental model of septic arthritis.** Boff D, Oliveira SLV, Martins MM, Amaral AF UFMG – Bioquímica e Imunologia

**04.092 Strontium ranelate does not interfere on the process of induced tooth**

**movement in rats.** Soares KA<sup>1</sup>, Araújo VMA<sup>2</sup>, Guimarães MV<sup>2</sup>, Melo IM<sup>2</sup>, Silva SRL<sup>2</sup>, Farina M<sup>1</sup>, Lima V<sup>2</sup> <sup>1</sup>ICB-UFRJ, <sup>2</sup>UFC – Physiology and Pharmacology

**04.093 Involvement of central ETA and CB1 receptors and arginine-vasopressin release in sepsis induced by cecal ligation and puncture in rats.** Leite MCG<sup>1</sup>, Lomba LA<sup>1</sup>, Brito HO<sup>1</sup>, Bastos-Pereira AL<sup>1</sup>, Fraga D<sup>2</sup>, Zampronio AR<sup>1</sup> <sup>1</sup>UFPR – Inflamação, <sup>2</sup>UFMS

**04.094 Adenosine A2A receptor role upon adipose tissue inflammation control in an experimental model of obesity.** de Oliveira CC<sup>1</sup>, Gotardo EMF<sup>2</sup>, Caria CRP<sup>2</sup>, Nakamitsu PFZ<sup>1</sup>, Gambero A<sup>2</sup> <sup>1</sup>Unicamp – Farmacologia, <sup>2</sup>USF – Imunofarmacologia e Biologia Molecular

**04.095 Polysaccharides *Caesalpinia ferrea* decreases acute inflammation in 5-fluorouracil-induced intestinal mucositis in mice.** Alcântara JR<sup>1</sup>, Morais JAV<sup>2</sup>, Sampaio LP<sup>2</sup>, Franco AX<sup>2</sup>, Costa DVS<sup>2</sup>, Martins CS<sup>2</sup>, Morais PAF<sup>2</sup>, Soares PMG<sup>2</sup>, Souza EP<sup>2</sup> – <sup>1</sup>UECE, <sup>2</sup>UFC – Morfologia

**04.096 Experimental alcoholic pancreatitis: new therapeutic approaches from natural products.**

Girão DKFB<sup>1</sup>, Fiorio BC<sup>2</sup>, Franco AX<sup>1</sup>, Morais CM<sup>1</sup>, Justino PFC<sup>1</sup>, Oliveira TB<sup>1</sup>, Bonfim SR<sup>1</sup>, Loiola AN<sup>1</sup>, Barbalho JVM<sup>1</sup>, Morais JAV<sup>1</sup>, Mendes WO<sup>1</sup>, Morais PAF<sup>1</sup>, Souza MHL<sup>1</sup>, Lima RF<sup>1</sup>, Criddle DN<sup>3</sup>, Soares PMG<sup>1</sup> <sup>1</sup>UFC, <sup>2</sup>UECE, <sup>3</sup>University of Liverpool

**04.097 Acute pancreatitis induced by tauro lithocholic acid cause inflammatory and functional changes in the lung.** Oliveira TB<sup>1</sup>, Morais CM<sup>1</sup>, Justino PFC<sup>1</sup>, Fiorio BC<sup>1</sup>, Damasceno SRB<sup>1</sup>, Morais PAF<sup>1</sup>, Menezes KLS<sup>1</sup>, Loiola AN<sup>1</sup>, Morais JAV<sup>1</sup>, Mendonça VA<sup>1</sup>, Xavier AF<sup>1</sup>, Ribeiro RA<sup>1</sup>, Souza MHL<sup>1</sup>, Barbalho JVM<sup>1</sup>, Girão DKFB<sup>1</sup>, Criddle DN<sup>2</sup>, Soares PMG<sup>3</sup> <sup>1</sup>UFC –

Farmacologia, <sup>2</sup>University of Liverpool, <sup>3</sup>UFC – Morfologia

**04.098 P and L-selectins inhibition prevents the development of ifosfamide-induced hemorrhagic cystitis in mice.** Dornelas-Filho AF<sup>1</sup>, Fernandes C<sup>1</sup>, Teixeira MA<sup>1</sup>, Wanderley CWS<sup>1</sup>, Pinto FMM<sup>1</sup>, Wong DVT<sup>1</sup>, Silva RO<sup>1</sup>, Sousa NRP<sup>1</sup>, Almeida PRC<sup>2</sup>, Ribeiro RA<sup>1</sup>, Lima-Júnior RCP<sup>1</sup> <sup>1</sup>UFC – Physiology and Pharmacology, <sup>2</sup>UFC – Pathology and Forensic Medicine

**04.099 Protective effect of N-acetylcysteine on irinotecan-induced experimental steatohepatitis.** Leal RMLV<sup>1</sup>, Aragão KS<sup>2</sup>, Lopes CDH<sup>2</sup>, Prado LD<sup>1</sup>, Pereira VBM<sup>2</sup>, Lima-Júnior RCP<sup>2</sup>, Almeida PRC<sup>4</sup>, Ribeiro RA<sup>2</sup> <sup>1</sup>HHJ-ICC, <sup>2</sup>UFC – Physiology and Pharmacology, <sup>3</sup>UFC – Pathology and Forensic Medicine

**04.100 Evaluation of safety and efficacy of the dry extract capsule of *Amburana cearensis* A C Smith in human neutrophils.** Rocha TM, Lopes AA, Magalhães HIF, Silveira ER, Viana GSB, Leal LKAM

**04.101 Paradoxical effect of protease-activated receptor (PAR)-2 and 4 on macrophage phagocytosis *in vitro*.** Barra A, Siqueira MVA, Matos NA, Freitas KM, Lopes MTP, Klein A <sup>1</sup>ICB-UFGM – Farmacologia

**04.102 Anti-inflammatory effects of *Hypnea cervicornis* agglutinin in rat experimental arthritis.** Bringel PHSF<sup>1</sup>, Almeida LM<sup>1</sup>, Simplício CAN<sup>2</sup>, Nascimento KS<sup>2</sup>, Assreuy AMS<sup>1</sup>, Castro RR<sup>1</sup> <sup>1</sup>ISCB-UECE, <sup>2</sup>UFC – Engenharia de Pesca

**04.103 Ferulic acid ethyl ester diminished knee incapacitation induced by carrageenan in rats.** Cunha FVM, Santos RRL, Sousa Neto BP, Gomes BS, Sousa DP, Oliveira FA <sup>1</sup>NPPM-UFPI

**04.104 Anti-inflammatory potential *in vitro* of isolated mixture of furan diterpenes of *Pterodon polygalaeiflorus*.** Leal NRF, Velozo

LSM, Sousa TV, Vigliano MV, Coelho MGP UERJ

**04.105** Suppressor of cytokine signaling 2 (SOCS2) protein is involved in the mechanisms that control lung inflammation during infection with the pathogenic fungus *Paracoccidioides brasiliensis*. Santos PC<sup>1</sup>, Ribeiro LS<sup>2</sup>, Tavares CF<sup>3</sup>, De Paula TP<sup>1</sup>, Werneck SMC<sup>1</sup>, Machado FS<sup>2</sup>, Teixeira MM<sup>2</sup>, Cisalpino PS<sup>1</sup>, Souza DG<sup>1</sup> <sup>1</sup>UFMG – Microbiologia, <sup>2</sup>UFMG – Bioquímica e Imunologia, <sup>3</sup>TBSI – Biochemistry and Immunology

**04.106** Role of phosphoinositide 3-kinase gamma and platelet activating factor receptor signaling in an experimental model of fever. Ribeiro LS<sup>1</sup>, Santos PC<sup>2</sup>, Machado RR<sup>3</sup>, Souza DG<sup>2</sup>, Teixeira MM<sup>1</sup> <sup>1</sup>UFMG – Bioquímica e Imunologia, <sup>2</sup>UFMG – Microbiologia, <sup>3</sup>UFMG – Produtos Farmacêuticos

**04.107** Role of IL-1 and TNF receptors in ifosfamide-induced hemorrhagic cystitis in mice. Leite CA<sup>1</sup>, Mota JM<sup>2</sup>, Mello PH<sup>3</sup>, Cunha FQ<sup>3</sup>, Ribeiro RA<sup>1</sup> <sup>1</sup>UFC – Physiology and Pharmacology, <sup>2</sup>FMRP-USP – Clinics, <sup>3</sup>FMRP-USP – Pharmacology

**04.108** Smoking-induced rheumatoid arthritis aggravation is dependent of aryl hydrocarbon receptor activation and is influenced by genetic polymorphism. Talbot J<sup>1</sup>, Liew FY<sup>2</sup>, Peres RS<sup>1</sup>, Pinto LG<sup>1</sup>, Oliveira RDR<sup>1</sup>, Silva JR<sup>1</sup>, Lima KWA<sup>1</sup>, França RFO<sup>1</sup>, Ryffel B<sup>3</sup>, Cunha TM<sup>1</sup>, Alves-Filho JCF<sup>1</sup>, Louzada-Júnior P<sup>1</sup>, Cunha FQ<sup>1</sup> <sup>1</sup>FMRP-USP – Pharmacology, <sup>2</sup>University of Glasgow, <sup>3</sup>CNRS

**04.109** Fructose 1,6-bisphosphate, an intermediate of glycolysis, promotes anti-inflammatory effects in experimental arthritis via adenosine 2a receptor. Veras FP, Peres RS, Pinto LG, Saraiva ALL, Cunha FQ, Alves-Filho JCF FMRP-USP – Pharmacology

**04.110** *Hypnea musciformis* polysaccharides in TNBS-induced colitis. Dias GJJ, Brito TV, Barbosa ALR UFPI – Experimental Physiopharmacology

**04.112** Eosinophil deficiency improves psoriatic like skin lesions in mice. Dourado LPA<sup>1</sup>, Rocha RPF<sup>1</sup>, Silva RC<sup>2</sup>, Oliveira VLS<sup>2</sup>, Dias ACF<sup>2</sup>, Souza DG<sup>1</sup>, Teixeira MM<sup>2</sup>, Amaral FA<sup>2</sup> <sup>1</sup>UFMG – Departamento de Microbiologia, <sup>2</sup>UFMG – Departamento de Bioquímica e Imunologia

**04.113** TNF receptors in murine melanoma progression – possible role on T regulatory cells (TREGS) and tumor associated macrophages (TAMS). Melo PH, Mota JMSC, Leite CAVG, Prado DS, Cunha FQ, Alves JCF FMRP-USP – Pharmacology, FMRP-USP – Clinics

**04.114** Anti-inflammatory and antioxidant activity of dry extract capsules of *Amburana cearensis* A C Smith. Albuquerque AA<sup>1</sup>, Lopes AA<sup>1</sup>, Leal LKAM<sup>1</sup>, Araruna SM<sup>1</sup>, Silveira ER<sup>2</sup>, Viana GSB<sup>3</sup> <sup>1</sup>UFC – Farmácia, <sup>2</sup>UFC – Química Orgânica e Inorgânica, <sup>3</sup>UFC – Fisiologia e Farmacologia

**04.115** Diet induced obese mice developed lung insulin resistance via protein nitration and inhibition of key proteins in the insulin signaling. Calixto MC, André DM, Sollon C, Anhê GF, Antunes E Unicamp

**04.116** Irinotecan-induced alterations in the myenteric plexus. Gomes AS<sup>1</sup>, Costa DVS<sup>1</sup>, Barreto Júnior JEF<sup>2</sup>, De Sá ISLB<sup>2</sup>, Andrade MN<sup>2</sup>, Aguiar BF<sup>2</sup>, Portela VS<sup>2</sup>, Alcântara JR<sup>3</sup>, Martins CS<sup>1</sup>, Moura Neto LI<sup>4</sup>, Brito GAC<sup>1</sup> <sup>1</sup>UFC – Morfologia, <sup>2</sup>UFC – Faculdade de Medicina, <sup>3</sup>UECE – Nutrição, <sup>4</sup>UFC – Enfermagem

**04.117** Ethanol extracts from chemotypes of *Myracrodruon urundeuva* reduce proinflammatory response of activated human neutrophils. Araujo EVO<sup>1</sup>, Milet



RRC<sup>2</sup>, Pierdoná TM<sup>3</sup>, Rocha TM<sup>4</sup>, Silveira ER<sup>5</sup>, Leal LKAM<sup>4</sup> <sup>1</sup>UFC – Fisiologia e Farmacologia, <sup>2</sup>UFC – Estudos Farmacêuticos e Cosméticos, <sup>3</sup>UFC – Fisiologia e Farmacologia, <sup>4</sup>UFC – Farmácia, <sup>5</sup>UFC – Química Orgânica e Inorgânica

**04.118 Pretreatment of lipopolysaccharide-injected rats with pravastatin increases the number of circulating platelets by mechanisms involving augment of plasma thrombopoietin levels.** Naime ACA<sup>1</sup>, Lopes-Pires ME<sup>1</sup>, Latuf P<sup>2</sup>, Vassalo J<sup>2</sup>, Lima CSP<sup>3</sup>, Landucci ECT<sup>1</sup>, Antunes E<sup>1</sup>, Marcondes S<sup>1</sup> <sup>1</sup>Unicamp – Farmacologia, <sup>2</sup>Unicamp – Anatomia Patológica, <sup>3</sup>Unicamp – Clínica Médica

**04.119 The effects of alpha-bisabol-loaded nanocapsules in model of acute pulmonary inflammation LPS-induced in mice.** D'Almeida APL<sup>1</sup>, Ciambarella BT<sup>1</sup>, Souza ET<sup>1</sup>, Marques S<sup>1</sup>, Terroso T<sup>2</sup>, Pohlmann AR<sup>2</sup>, Guterres SS<sup>2</sup>, Silva PMR<sup>1</sup>, Cordeiro RSB<sup>1</sup>, Martins MA<sup>1</sup>, Bernardi A<sup>1</sup> <sup>1</sup>IOC-Fiocrus, <sup>2</sup>UFRGS – Farmácia

**04.120 Toll-like receptor-7 agonist resiquimod decreases established allergen-induced asthma changes in mice: impact on eosinophil survival.** Ghilosso-Bortolini R, Ciambarella BT, Olsen PC, Azevedo C, Cotias AC, Dias DF, Arantes ACS, Silva PMR, Martins MA IOC-Fiocrus

**04.121 Early pro- and anti-inflammatory responses to LPS-induced epididymitis in rats.** Silva EJR<sup>1</sup>, Mirim AFMN<sup>1</sup>, Avellar MCW<sup>1</sup> <sup>1</sup>Unifesp-EPM – Farmacologia

**04.122 The atypical chemokine receptor d6 plays a protective role during experimental sepsis.** Castanheira FVS<sup>1</sup>, Sonogo F<sup>1</sup>, Kanashiro S<sup>1</sup>, Borges VF<sup>1</sup>, Melo PH<sup>2</sup>, Russo RC<sup>3</sup>, Cunha TM<sup>1</sup>, Alves-Filho JCF<sup>1</sup>, Cunha FQ<sup>1</sup> <sup>1</sup>FMRP-USP – Farmacologia, <sup>2</sup>FMRP-USP – Imunologia, <sup>3</sup>UFMG – Fisiologia e Bioquímica

**04.123 Treadmill exercise induces neutrophil recruitment into muscle tissue in a reactive oxygen species-dependent manner. An intravital microscopy study.** Silva AN<sup>1</sup>, Bernardes PTT<sup>1</sup>, Rezende BM<sup>1</sup>, Gomes EC<sup>1</sup>, Pinho V<sup>1</sup>, Marques PE<sup>1</sup>, Lima PMA<sup>2</sup>, Coimbra CC<sup>2</sup>, Menezes GB<sup>1</sup>, Teixeira MM<sup>3</sup> <sup>1</sup>UFMG – Morfologia, <sup>2</sup>UFMG – Fisiologia e Biofísica, <sup>3</sup>UFMG – Bioquímica e Imunologia

## 05. Pain and Nociception

**05.037 Aldehyde dehydrogenase 2 activation reduces neuropathic pain and 4-hydroxynonenal adducts in spinal cord.** Netto BS<sup>1</sup>, Ferreira JC<sup>2</sup>, Chen CH<sup>3</sup>, Mochly-Rosen D<sup>3</sup>, Cury Y<sup>1</sup>, Zambelli VO<sup>1</sup> <sup>1</sup>IBu – Dor e Sinalização, <sup>2</sup>ICB-USP – Anatomia, <sup>3</sup>Stanford University – Chemistry and Systems Biology

**05.038 Evaluation of antinociceptive and anti-inflammatory effects of LQFM-023 – New derivative of PDE3 inhibitors.** Lino RC<sup>1</sup>, Melo GS<sup>2</sup>, Pazini F<sup>3</sup>, Menegatti R<sup>3</sup>, Costa EA<sup>4</sup> <sup>1</sup>ICB-UFG / UEG – Pharmacology of Natural Products, <sup>2</sup>UEG – Pharmacy, <sup>3</sup>FF-UFG – Pharmaceutical Medicinal Chemistry, <sup>4</sup>ICB-UFG – Pharmacology of Natural Products

**05.039 Antinociceptive activity of the novel compound isolated from Peperomia.** Queiroz APS<sup>1</sup>, Freitas MCC<sup>2</sup>, Lima AB<sup>1</sup>, Silva MN<sup>3</sup>, Arruda MSP<sup>2</sup>, Do Nascimento JLM<sup>4</sup>, Bastos GNT<sup>1</sup> <sup>1</sup>UFPA – Neuroinflamação, <sup>2</sup>UFPA – Extração, <sup>3</sup>UFPA – Cromatografia Líquida, <sup>4</sup>UFPA – Neuroquímica

**05.040 Therapeutical efficacy of fish oil extract on experimental model of neuropathic pain.** Silva RV<sup>1</sup>, Lima CKF, Moreira CC, Santos EAP, Lobo BW, Miranda ALP FF-UFRJ – Fármacos e Medicamentos

**05.041 Involvement of dorsal and ventral regions of the anterior pretectal nucleus**

in descending modulation of neuropathic pain. Rossaneis AC<sup>1</sup>, Prado WA<sup>2</sup> <sup>1</sup>UEL – Ciências da Saúde, <sup>2</sup>FMRP-USP – Farmacologia

**05.042** Spinal TLR9 is involved in the genesis of chronic inflammatory and neuropathic pain states. Ferreira DW, Fonseca MDM, Santa-Cecília FV, Cunha FQ, Cunha TM FMRP – Farmacologia

**05.043** IFN- $\gamma$  mediates the induction of indolamine (2,3)-dioxygenase (IDO) in the spinal cord that account for the genesis of neuropathic pain. Fonseca MDM, Santana DAR, Souza GR, Cunha FQ, Cunha TM FMRP-USP – Farmacologia

**05.044** Investigation of the antinociceptive activity of riparin – IV using different animal models. Dias ML, Carvalho AMR, Rios ERV, Rocha NFM, Vasconcelos LF, Barbosa Filho JM, Brito GAC, Silva-Alves KS, Costa FL, Leal-Cardoso JH, Sousa FCF UFC

**05.045**  $\alpha$ -phellandrene administration reduces inflammatory pain in rats: Preliminar evaluation. Santos WC<sup>1</sup>, Macedo EMA<sup>1</sup>, Piaulino CA<sup>1</sup>, Reis-Filho AC<sup>1</sup>, Sousa DP<sup>2</sup>, Oliveira FA<sup>1</sup>, Almeida FRC<sup>1</sup> <sup>1</sup>CCS-UFPI – Plantas Medicinais, <sup>2</sup>UFPB – Ciências Farmacêuticas

**05.046** Antinociceptive effects of essential oil of *Piper rivinoides* Kunth. Costa NF<sup>1</sup>, Siqueira AM<sup>1</sup>, Nascimento DD<sup>1</sup>, Souza SP<sup>2</sup>, Valverde SS<sup>2</sup>, Castro-Faria-Neto HC<sup>1</sup>, Frutuoso VS<sup>1</sup> <sup>1</sup>IOC-Fiocruz – Immunofarmacology, <sup>2</sup>Farmanguinhos-Fiocruz – Natural Products

**05.047** Polysaccharide extracts of *Ximenia americana* barks ameliorate abdominal hypernociception in cerulein-induced acute pancreatitis. Silva KES<sup>1</sup>, Assreuy AMS<sup>1</sup>, Pires AF<sup>1</sup>, Girão DKFB<sup>2</sup>, França FV<sup>3</sup>, Criddle DN<sup>4</sup>, Pereira MGP<sup>3</sup>, Soares PMG<sup>2</sup> <sup>1</sup>ISCB-UECE, <sup>2</sup>UFC – Morfologia, <sup>3</sup>FECLESC-UECE, <sup>4</sup>University of Liverpool

**05.048** Antinociceptive properties of physalins from *Physalis angulate*. Lima MS<sup>1</sup>, Evangelista AF<sup>2</sup>, Santos GGL<sup>2</sup>, Ribeiro IM<sup>3</sup>, Tomassini TCB<sup>3</sup>, Soares MBP<sup>2,4</sup>, Villarreal CF<sup>1,2</sup> <sup>1</sup>FF-UFBA, <sup>2</sup>CPqGM-Fiocruz, <sup>3</sup>FarManguinhos-Fiocruz, <sup>4</sup>CBTC-HSR

**05.049** Neryl acetate is effective in attenuate acute pain in animal model in comparison with nerol. Araujo JM<sup>1</sup>, Lopes EM<sup>1</sup>, Vasconcelos ALM<sup>1</sup>, Freitas FFBP<sup>1</sup>, Reis Filho AC<sup>1</sup>, Reis Filho AC<sup>1</sup>, Reis Filho AC<sup>1</sup>, Sousa DP<sup>2</sup>, Sousa DP<sup>2</sup>, Almeida FRC<sup>1</sup>, Almeida FRC<sup>1</sup> <sup>1</sup>UFPI – Plantas medicinais, <sup>2</sup>UFPB – Ciências Farmacêuticas

**05.050** Riparin B, an alkaloid obtained from *Aniba riparia*, acting in the reduction of acute pain. Santiago RF<sup>1</sup>, Fontenele AM<sup>1</sup>, Braúna IS<sup>1</sup>, Brito TV<sup>1</sup>, Cruz Júnior JS<sup>1</sup>, Batista JA<sup>1</sup>, Fernandes HB<sup>1</sup>, Dias JM<sup>1</sup>, Freitas RM<sup>2</sup>, Medeiros JVR<sup>1</sup>, Barbosa ALR<sup>1</sup> <sup>1</sup>UFPI – Plantas Medicinais, <sup>2</sup>UFPI – Pharmacy

**05.051** Effect of transplantation of bone marrow mesenchymal stem cells in murine model of diabetic peripheral neuropathy. Evangelista AF<sup>1</sup>, Silva DN<sup>2</sup>, Soares MBP<sup>1,2</sup>, Villarreal CF<sup>1,3</sup> <sup>1</sup>CPqGM-Fiocruz – Engenharia Tecidual e Immunofarmacologia, <sup>2</sup>CBTC-HSR, <sup>3</sup>FF-UFBA

**05.052** Heme oxygenase-1/carbon monoxide pathway peripherically activated reduces inflammatory hypernociception in the temporomandibular joint dependent from ATP-sensitive K<sup>+</sup> channel but not from NO/cGMP/protein kinase G pathway. Freitas HC<sup>1</sup>, Alves SM<sup>2</sup>, Maciel GF<sup>3</sup>, Val DR<sup>4</sup>, Gondim DV<sup>5</sup>, Pereira KMA<sup>2</sup>, Brito GAC<sup>5</sup>, Napimoga JTC<sup>6</sup>, Filho GC<sup>2</sup>, Pinto VPT<sup>2</sup>, Bezerra MM<sup>2</sup>, Chaves HV<sup>2</sup> <sup>1</sup>UFC – Medicina, <sup>2</sup>UFC – Ciências da Saúde, <sup>3</sup>UFC – Odontologia, <sup>4</sup>RENORBIO-UFPE, <sup>5</sup>UFC – Ciências Morfofuncionais, <sup>6</sup>Unicamp – Odontologia

**05.053 LASSBio-1141: A neuro-immune modulator effective in a model of neuropathic pain.** Lima CKFL<sup>1</sup>, Silva RV<sup>1</sup>, Yekkiralal AS<sup>2</sup>, Lacerda RB<sup>3</sup>, Barreiro EJL<sup>4</sup>, Fraga CAM<sup>4</sup>, Cunha TM<sup>5</sup>, Woolf CJ<sup>2</sup>, Miranda ALP<sup>1</sup> <sup>1</sup>LEFEx-UFRJ – Farmácia, <sup>2</sup>Harvard Medical School, <sup>3</sup>UFRRJ – Química, <sup>4</sup>LASSBio-UFRJ – Farmácia, <sup>5</sup>FMRP-USP

## **06. Cardiovascular and Renal**

**06.043 Impaired vascular function in sepsis-surviving rats: evidence for endothelial dysfunction mediated by angiotensin II, increased ROS/RNS Generation and augmented activity of RHO-kinase.** de Souza P<sup>1</sup>, Scheschowitsch K<sup>2</sup>, da Silva LM<sup>1</sup>, Guarido KL<sup>2</sup>, Werner MF<sup>1</sup>, Assreuy J<sup>2</sup>, da Silva-Santos JE<sup>2</sup> <sup>1</sup>UFPR – Pharmacology, <sup>2</sup>UFSC – Pharmacology

**06.044 LASSBio-1425 – antiatherogenic and anti-inflammatory activity of a new phthalimide derivate.** Fumian MM<sup>1</sup>, Motta NAV<sup>1</sup>, Leite TRS<sup>1</sup>, Maia RC, Barreiro EJL<sup>2</sup>, Brito FCF<sup>1</sup> <sup>1</sup>UFF – Fisiologia e Farmacologia, <sup>2</sup>UFRJ – Síntese e Avaliação de Substâncias Bioativas

**06.045 *In vitro* tolerance induced by sodium nitrite in mice aorta.** Araújo NF, Bonaventura D UFMG – Farmacologia

**06.046 Bufalin induced vasoconstriction at pharmacological concentrations involves adrenergic pathway in guinea pig vascular segments.** Amorim LS<sup>1</sup>, Oliveira IMB<sup>1</sup>, Freire MSS<sup>1</sup>, Siqueira RJB<sup>2</sup>, Santos CF<sup>1</sup>, Nascimento NRF<sup>1</sup>, Fonteles MC<sup>1</sup> <sup>1</sup>UECE – Fisiofarmacologia Cardiovascular e Renal, <sup>2</sup>UFC

**06.047 Pravastatin and rosuvastatin reduce fibrinogen receptor activation and platelet adhesion to fibrinogen of high fat-fed rats.** Goulart G<sup>1</sup>, Araujo HN<sup>2</sup>, Lopes Pires ME<sup>1</sup>, Monteiro PF<sup>1</sup>, Antunes E<sup>1</sup>, Delbin MA<sup>3</sup>, Marcondes S<sup>1</sup> <sup>1</sup>Unicamp – Pharmacology, <sup>2</sup>Unesp-Rio Claro – Physical

Education, <sup>3</sup>Unicamp – Structural Biology and Functional

**06.048 Vasorelaxant effect of the beta-phenylethylamine on rat isolated aortic rings.** Nóbrega FC, Brito TS, Lima FJB, Magalhães PJC UFC – Physiology and Pharmacology

**06.049 Chronic treatment with apocynin improves the resistance vessel relaxations to acetylcholine and increases the nitric oxide concentration in endothelial cells of SHR.** Potje SR, Graton ME, Troiano JA, Perassa LA, Antoniali C Unesp – Basic Sciences

**06.050 Uroguanylin stimulates distal potassium secretion via PKG pathway.** Gonzaga JLD, Godinho AN, Fonteles MC, Lessa LMA UECE – Fisiofarmacologia Cardiorenal

**06.051 Alpha-1 antagonism of molecules that contains pirimidone rings (6-oxo-2,4-diaryl-1,6-dihydro-pyrimidine-5-carbonitriles).** Costa CP<sup>1</sup>, Wanderley AG<sup>1</sup>, Anjos JV<sup>2</sup>, Araújo AV<sup>3</sup> <sup>1</sup>UFPE – Physiology and Pharmacology, <sup>2</sup>UFPE – Fundamental Chemistry, <sup>3</sup>CAV-UFPE

**06.052 Increased nitric oxide generation after low level laser therapy (LLLT) in rat myocardial infarct (MI) model.** Manchini M<sup>1</sup>, Santana E<sup>1</sup>, Serra A<sup>1</sup>, Antonio E<sup>2</sup>, Craijonas R<sup>3</sup>, Girardi A<sup>3</sup>, Tucci P<sup>2</sup>, Silva JA Jr<sup>1</sup> <sup>1</sup>Uninove – Ciências Médicas, <sup>2</sup>Unifesp – Fisiologia Cardiovascular, <sup>3</sup>FMUSP-HC-InCor

**06.053 Uroguanylin inhibits H-ATPase activity and surface expression in renal distal tubules by a PKG dependent pathway.** Godinho AN<sup>1</sup>, Lima VS<sup>1</sup>, Crajoinas RO, Carraro-Lacroix LR<sup>2</sup>, Dias JLG<sup>1</sup>, Dariolli R<sup>3</sup>, Girardi ACC<sup>3</sup>, Fonteles MC<sup>1</sup>, Malnic G<sup>2</sup>, Lessa LMA<sup>1</sup> <sup>1</sup>ISCB-UFC, <sup>2</sup>ICB-USP – Physiology and Biophysics, <sup>3</sup>FMUSP-HC-InCor

**06.054** Cardiac intracellular  $\text{Ca}^{2+}$  handling and  $\beta$ -adrenergic activity in rats submitted to neonatal leptin treatment. Marques EB<sup>1</sup>, Silva RM<sup>1</sup>, Pinto LMO<sup>2</sup>, Nascimento JHM<sup>2</sup>, Scaramello CBV<sup>1</sup> <sup>1</sup>UFF – Farmacologia Experimental, <sup>2</sup>IBCCF-UFRJ

**06.055** Dipeptidyl-peptidase IV activity in *Bothrops alternatus* snake venom and renal tissue of rats. Fernandes PCL, Torres-Huaco FD, Hyslop S Unicamp – Farmacologia

**06.056** Electrolyte disorder in the acute renal failure induced by gentamicin in rats. Bona MD, Rodrigues FAP, Coelho YP, Prata MMG, Oliveira DMN, Pereira JM, Costa PHS, Silva PLB, Monteiro HSA, Havt A UFC – Fisiologia e Farmacologia

**06.057** Effect of chronic salt intake in cardiovascular and metabolic parameters in Dahl rats. Farah V<sup>1</sup>, Arnold A, Araujo IC, Pereira J, Silva I, Brandão M, Sacchi J, Oliveira R, Fiorino P, Fonteles MC Mackenzie University

**06.058** The A1 and P2Y1 receptor are the receptor involved in the cardiac arrest produced by ATP? Rodrigues JQD, Silva Júnior ED, Câmara H, Godinho RO, Jurkiewicz A Unifesp – Farmacologia

**06.059** Uroguanylin inhibits proximal bicarbonate reabsorption in Dahl salt rats. Lessa LMA, Martins ICMT, Godinho AN, Nascimento NRF, Fonteles MC ISCB-UFC

**06.060** Reversibility of oxidative and glomerular damage in an experimental model of renal injury by gentamicin. Coelho YP, Rodrigues FAP, Prata MMG, Alves NTQ, Oliveira DMN, Pereira JM, Silva PLB, Costa PHS, Monteiro HSA, Bindá AH UFC – Physiology and Pharmacology

**06.061** Apocynin modulates phenylephrine and acetylcholine reactivity in aortic rings of spontaneously hypertensive rats (SHR). Graton ME<sup>1</sup>, Potje SR<sup>1</sup>, Troiano JA<sup>1</sup>,

Perassa LA<sup>1</sup>, Antoniali C<sup>1</sup> <sup>1</sup>FOA-Unesp – Basic Sciences

**06.062** Chronic candesartan treatment prevents erectile dysfunction in streptozotocin induced diabetic rats. Neves NCV<sup>1,2,3</sup>, Damasceno EC<sup>1</sup>, Felipe-Batista K<sup>1</sup>, Guimarães HN<sup>4</sup>, Grabe-Guimarães A<sup>1</sup>, Leite R<sup>1</sup> <sup>1</sup>UFOP – Farmácia, <sup>2</sup>ICB-UFMG, <sup>3</sup>FASAR – Bioquímica e Farmacologia, <sup>4</sup>UFMG – Engenharia

## 07. Endocrine and Gastrointestinal

**07.004** Molecular analysis of the effects of roscovitine on hepatic stellate cells of murine. Della Porta L<sup>1</sup>, Ramalho FS<sup>1</sup>, Oliveira CAF<sup>2</sup>, Figueiredo SS<sup>1</sup>, Augusto MJ<sup>1</sup>, Ramalho LNZ<sup>1</sup> <sup>1</sup>USP – Patologia e Medicina Legal, <sup>2</sup>USP – Engenharia de Alimentos

## 09. Natural Products and Toxinology

**09.105** Wound repair, inflammatory and oxidative stress aspects, promoted by proteolytic fraction from *Vasconcellea cundinamarcensis* latex on UVB-induced model. Freitas KM, Teixeira LCR, Lage FDO, Lopes MTP UFMG – Farmacologia

**09.106** Cellular mechanisms in antimetastatic action of protease from *V. cundinamarcensis* latex on murine melanoma cells. Dittz D<sup>1</sup>, Tatsumi G<sup>1</sup>, Salas CE<sup>2</sup>, Lopes MTP<sup>1</sup> <sup>1</sup>UFMG – Farmacologia, <sup>2</sup>UFMG – Bioquímica

**09.107** Pharmacological analysis of the hemodynamic response to *Bothrops atrox* snake venom in anesthetized rats. Rodrigues MAP, Dias L, Stroka A, Rennó AL, Inoue BR, Panunto PC, Hyslop S Unicamp – Farmacologia

**09.108** Calcium mobilization induced by *Bothriopsis bilineata smaragdina* venom (Forest viper) and its toxin Bbil-TX (Asp49 PLA<sub>2</sub>) on neuroblastoma cell line and mouse triangularis sterni nerve-muscle preparation. Floriano RS<sup>1</sup>, Carregari VC<sup>2</sup>, Marangoni S<sup>2</sup>, Hyslop S<sup>3</sup>, Rowan EG<sup>4</sup>,

Rodrigues-Simioni L<sup>3</sup> – <sup>1</sup>UNIP-Sorocaba – Health Sciences / FCM-Unicamp, – Pharmacology, <sup>2</sup>IB-Unicamp – Department of Biochemistry, <sup>3</sup>FCM-Unicamp – Pharmacology, <sup>4</sup>SIBS-University of Strathclyde

**09.109 Effect of *Euterpe oleracea* Mart. (Açaí) extract and exercise training on the changes caused by Type 2 Diabetes.** Bem GF, Costa CA, Santos IB, Oliveira RB, Cordeiro VSC, Carvalho LCRM, Souza MAV, Ribeiro JH, Okinga A, Rocha APM, Ognibene DT, Resende AC, Moura RS UERJ – Farmacologia e Psicobiologia

**09.110 Hypotensive effect and vascular reactivity induced by (-)-borneol/ $\beta$ -ciclodextrin in L-NAME hypertensive rats.** Silva-Filho JC<sup>1</sup>, Souza FM<sup>1</sup>, Azevedo PSS<sup>1</sup>, Santos MEP<sup>1</sup>, Mendes MB<sup>1</sup>, Arcanjo DDR<sup>1</sup>, Rocha MS<sup>2</sup>, Lima SG<sup>2</sup>, Oliveira AP<sup>1</sup>, Santos MRV<sup>3</sup> – <sup>1</sup>NPPM-UFPI, <sup>2</sup>UFPI – Química, <sup>3</sup>UFS – Fisiologia

**09.111 Local and systemic effects of BdipTX-I, a new phospholipase A<sub>2</sub> Lys-49 isolated from *Bothrops diporus* snake venom.** Teixeira LF<sup>1</sup>, Carvalho LH<sup>1</sup>, Castro OB<sup>1</sup>, Bastos JSF<sup>1</sup>, Néry NM<sup>1</sup>, Oliveira GA<sup>2</sup>, Kayano AM<sup>2</sup>, Calderon LA<sup>2</sup>, Soares AM<sup>2</sup>, Zuliani JP<sup>1,2</sup> <sup>1</sup>Fiocruz-RO – Imunologia Celular, <sup>2</sup>CEBio-UNIR – Medicina / Fiocruz-RO

**09.112 Protective effect of *p*-cymene against NSAIDs and stress-induced gastric ulcers in mice.** Paulo LL<sup>1</sup>, Formiga RO<sup>2</sup>, Lima GRM<sup>1</sup>, Sales IRP<sup>1</sup>, Castello Branco MVS<sup>1</sup>, Batista LM<sup>1</sup> <sup>1</sup>UFPB – Produtos Naturais e Sintéticos Bioativos, <sup>2</sup>CCS-UFPB

**09.113 Anthelmintic potential of a natural compound against *Schistosoma mansoni*.** Coelho ML, Costa LM, Moraes J, Freitas RM. UFPI

**09.114 Potential anti-allergic action of three medicinal plants used in Amazon region: Effects on histamine release.** de

Oliveira DM<sup>1,2</sup>, Di Stasi LC<sup>3</sup>, Paracampo NENP<sup>4</sup>, Lameira OA<sup>5</sup>, Crespo-Lopez ME<sup>1</sup> <sup>1</sup>ICB-UFPA – Farmacologia Molecular, <sup>2</sup>ISPA-UFRA – Farmacologia, <sup>3</sup>IBB-Unesp-Botucatu – Fitoterápicos, <sup>4</sup>EMBRAPA – Agroindústria, <sup>5</sup>EMBRAPA – Biotecnologia

**09.115 Evaluation of antioxidant potential *in vitro* and quantification of phenolic compounds found in extracts of pequis pulp.** Lima LAR, Ferreira JAN, Sousa ACP, Calou IBF, Portela JVF, Cerqueira GS, Lima A – CSHNB-UFPI – Nutrição

**09.116 Study of anticholinesterasic activity of a mixture of CIS and trans nerolidol.** Carvalho RBF<sup>1</sup>, Almeida AAC<sup>1</sup>, Mata AMOF<sup>2</sup>, Freitas RM<sup>1</sup>, Nunes LCC<sup>1</sup> <sup>1</sup>UFPI, <sup>2</sup>UNINOVAFAP

**09.117 Effects of *Myracrodruon urundeuva* All. essential oil against *Leishmania amazonensis* and its cytotoxicity in macrophages.** Carvalho CES, Júnior EPCS, Brito ML, Oliveira JMG, Silva RM, Citó AMGL, Carvalho FAA – UFPI

**09.118 Effects of a grape skin extract of *Vitis vinifera* (ACH09) on hepatic metabolic disorders in C57BL/6 mice fed a high-fat diet.** Santos IB, da Costa GF, de Bem GF, Costa CA, Carvalho LCRM, Okinga A, Rocha APM, Cordeiro VSC, Oliveira RB, Moura RS, Resende AC UERJ – Farmacologia e Psicobiologia

**09.119 Evaluation of the anti-leishmania and anti-trypanosoma activity of ethanol extract of leaves from *Annona squamosa*.** Cesário FRAS<sup>1</sup>, Monteiro AB<sup>1</sup>, Rodrigues LB<sup>1</sup>, Rodrigues CKS<sup>1</sup>, Sales VS<sup>1</sup>, Figueiredo FRSDN<sup>1</sup>, Amaro EN<sup>1</sup>, Delmondes GA<sup>1</sup>, Cruz LP<sup>1</sup>, Cunha FB<sup>1</sup>, Nascimento EP<sup>1</sup>, Costa JGM<sup>1</sup>, Kerntopf MR<sup>1</sup>, Coutinho HDM<sup>1</sup>, Menezes IRA<sup>1</sup>, Felipe CFB<sup>2</sup>, Tintino SR<sup>1</sup>, Gomes MCV<sup>4</sup>, Coronel C<sup>4</sup> <sup>1</sup>URCA – Biological Chemistry, <sup>2</sup>UFPB – Molecular Biology, <sup>4</sup>FMB – Desarrollo de La Investigación Científica

**09.120** Silymarin protects against irinotecan-induced non-alcoholic steatohepatitis through the inhibition of protein nitrosylation and toll-like receptor 4 immunoexpression. Assis-Júnior EM<sup>1</sup>, Sousa NRP<sup>1</sup>, Moreira LS<sup>1</sup>, Malveira LRC<sup>1</sup>, Wong DVT<sup>1</sup>, Melo AT<sup>1</sup>, Pereira VBM<sup>1</sup>, Wanderley CWS<sup>1</sup>, Soares BM<sup>1</sup>, Almeida PRC<sup>2</sup>, Ribeiro RA<sup>1</sup>, Lima-Júnior RCP<sup>1</sup> <sup>1</sup>UFC – Physiology and Pharmacology, <sup>2</sup>UFC – Pathology and Forensic Medicine

**09.121** Hypotensive effect of ethanol extract from *Lippia origanoides* H.B.K. in normotensive rats. Carvalho GD<sup>1</sup>, Miranda VC<sup>1</sup>, Coelho AG<sup>2</sup>, Mendes MB<sup>1</sup>, Arcanjo DDR<sup>1</sup>, Citó AMGL<sup>2</sup>, Oliveira AP<sup>1</sup> <sup>1</sup>NPPM-UFPI, <sup>2</sup>UFPI – Química

**09.122** Antinociceptive and toxicological analysis of an Amazon oil: Pp-oil. Mota AS<sup>1</sup>, De Lima AB<sup>1</sup>, Gomes MF<sup>1</sup>, Dias DCR<sup>1</sup>, Santos GCQ<sup>1</sup>, Nascimento GS<sup>1</sup>, Silveira TS<sup>2</sup>, Albuquerque TLF<sup>1</sup>, Do Nascimento JLM<sup>3</sup>, Da Silva JKR<sup>4</sup>, Maia JGS<sup>4</sup>, Ribeiro AF<sup>5</sup>, Bastos GNT<sup>1</sup> <sup>1</sup>UFPA – Neuroinflamação, <sup>2</sup>UEPA, <sup>3</sup>UFPA – Neuroquímica Molecular e Celular, <sup>4</sup>UFPA, <sup>5</sup>UNIFESSPA

**09.123** Effect of low level laser on tend endothelial cells subjected to injury by *Bothrops jararaca* venom. Zamuner SF<sup>1</sup>, Franco ATB<sup>1</sup>, Silva LM<sup>1</sup>, Teixeira CFP<sup>2</sup>, Zamuner SR<sup>1</sup> <sup>1</sup>Uninove, <sup>2</sup>IBU

**09.124** Effect of diosgenin on cardiac oxidative stress in female ovariectomized rats. Morais ICPS<sup>1</sup>, Moura IJL<sup>2</sup>, Nicolau LAD<sup>1</sup>, Arcanjo DDR<sup>2</sup>, Carvalho CES<sup>1</sup>, Piauilino CA<sup>1</sup>, Santos MEP<sup>1</sup>, Carvalho EF<sup>1</sup>, Medeiros JR<sup>3</sup>, Oliveira AP<sup>1</sup> <sup>1</sup>NPPM-UFPI, <sup>2</sup>UFPI, <sup>3</sup>UFPI-Parnaíba

**09.125** *Canavalia brasiliensis* lectin relaxes resistance and capacitance vessels in normoglycemic and diabetic rats. Laranjeira EPP<sup>1</sup>, da Silva DHM<sup>1</sup>, Bringel PHSF<sup>1</sup>, Cajazeiras JB<sup>2</sup>, Cavada BS<sup>2</sup>, Soares PMG<sup>3</sup>, Assreuy AMS<sup>1</sup>, Pires AF<sup>1</sup> <sup>1</sup>ISCB-UECE,

<sup>2</sup>UFC – Bioquímica e Biologia Molecular,

<sup>3</sup>UFC – Morfologia

**09.126** Evaluation of antinociceptive activity by central mechanisms of protein extract of the green seaweed *Caulerpa racemosa* (Forsskål) J. Agardh in mice. Ribeiro NA, Servente P, Maia CY, Benevides NMB UFC – Biochemistry and Molecular Biology

**09.127** Monoterpene nerol induces vasorelaxant effect by inhibiting calcium influx in rat aorta. Branco NC<sup>1</sup>, Carvalho EF<sup>1</sup>, Nunes AF<sup>1</sup>, Santos RF<sup>1</sup>, Sousa DP<sup>2</sup>, Oliveira AP<sup>1</sup>, Oliveira RCM<sup>1</sup> <sup>1</sup>NPPM-UFPI, <sup>2</sup>UFPB – Pharmaceutical Science

**09.128** *Platonia insignis* Mart. ethanolic extract as a potential anti-leishmania agent: Effects on *Leishmania amazonensis* promastigotes and cytotoxicity in macrophages. Sobrinho Júnior EPC, Carvalho CES, Brito LM, Costa ICG, Chaves MH, Carvalho FAA UFPI

**09.129** Hydrogel of polyacrylamide-co-methylcellulose containing extract *Calendula officinalis* L. Castro LD, Bandeira ES, Gomes MF, Queiroz Santos GC, Ribeiro-Costa RM, Bastos GNT<sup>1</sup> UFPA

**09.130** Prospection of antitumor sulfated polysaccharides obtained of algae from the Brazilian coast. Assef ANB<sup>1</sup>, de Oliveira CF<sup>2</sup>, do Carmo LD<sup>1</sup>, de Souza TG<sup>1</sup>, Alencar NMN<sup>1</sup>, Moreira TA<sup>2</sup>, Faria CN<sup>2</sup>, da Silva KT<sup>2</sup>, da Costa BB<sup>2</sup>, Cinelli LP<sup>2</sup>, Costa-Lotufo LV<sup>1</sup>, Wilke DV<sup>1</sup> <sup>1</sup>UFC – Fisiologia e Farmacologia, <sup>2</sup>UFRJ-Macaé – Glicofármacos

**09.131** Galetin 3,6-dimethyl ether activates K<sup>+</sup> channels and reduces Ca<sup>2+</sup> cytosolic levels on guinea pig ileum. Vasconcelos LHC<sup>1</sup>, Correia ACC<sup>2</sup>, Souza ILL<sup>1</sup>, Paredes-Gamero EJ<sup>3</sup>, Buri MV<sup>3</sup>, Rigoni VLS<sup>3</sup>, Santos BVO<sup>1,4</sup>, Cavalcante FA<sup>1,5</sup>, Silva BA<sup>1,4</sup> <sup>1</sup>UFPB, <sup>2</sup>ICBS-UFAL, <sup>3</sup>DB-Unifesp, <sup>4</sup>DCF-UFPB, <sup>5</sup>DFP-UFPB

**09.132** Sulfated polysaccharides from *Dictyota caribaea* inhibit sarcoma 180 tumor growth. Assef ANB<sup>1</sup>, Celestino RCA<sup>2</sup>, Cinelli LP<sup>3</sup>, Carmo LD<sup>1</sup>, Souza TFG<sup>1</sup>, Alencar NMN<sup>1</sup>, Santos GRC<sup>4</sup>, Mourão PAS<sup>4</sup>, Costa-Lotufo LV<sup>1</sup>, Wilke DV<sup>1</sup> <sup>1</sup>UFC – Fisiologia e Farmacologia, <sup>2</sup>UFRJ-Macaé, <sup>3</sup>UFRJ-Macaé – Glicofármacos, <sup>4</sup>UFRJ – Bioquímica Médica

**09.133** Antihistaminic activity of *Schinus terebinthifolius* Raddi (Anacardiaceae) Bark extract. Silva JL<sup>1</sup>, Neto PAN<sup>2</sup>, Sobrinho TJSP<sup>2</sup>, Júnior ED<sup>3</sup>, Costa-Silva JH<sup>4</sup>, Araújo AV<sup>5</sup>, Wanderley AG<sup>2,1</sup> <sup>1</sup>UFPE – Fisiologia e Farmacologia, <sup>2</sup>UFPE – Pharmaceutical Sciences, <sup>3</sup>Unifesp – Pharmacology, <sup>4</sup>UFPE – Physical Education and Sports Science, <sup>5</sup>UFPE – Nutrition

**09.134** Involvement of K<sup>+</sup> channels on spasmolytic effect of the new derivative of norlapachol on guinea pig ileum. Silva ACL<sup>1</sup>, Vasconcelos LHC<sup>1</sup>, Galvão JLFM<sup>1</sup>, Ferreira PB<sup>1</sup>, David CC<sup>2</sup>, Câmara CA<sup>2</sup>, Cavalcante FA<sup>3</sup>, Silva BA<sup>4</sup> <sup>1</sup>UFPB, <sup>2</sup>DCM-UFRPE, <sup>3</sup>DFP-UFPB, <sup>4</sup>DCF-UFPB

**09.135** Antitumor agents from *Actinomadura* sp. recovered from marine sediment collected at St. Peter and St. Paul Archipelago (SPSPA). Nunes LF<sup>1,2</sup>, Ferreira EG<sup>1</sup>, Pires K<sup>1,3</sup>, Costa JFT<sup>4</sup>, Torres MCM<sup>4</sup>, Jimenez PC<sup>1,5</sup>, Silveira ER<sup>4</sup>, Pessoa ODL<sup>4</sup>, Costa-Lotufo LV<sup>1,6</sup> <sup>1</sup>LABOMAR-UFC – Ciências do Mar, <sup>2</sup>UECE, <sup>3</sup>IFSC, <sup>4</sup>UFC – Química Orgânica e Inorgânica, <sup>5</sup>Unifesp – Ciências do Mar, <sup>6</sup>UFC – Fisiologia e Farmacologia

**09.136** A role for the nitric oxide-cGMP pathway in the hemodynamic and vascular responses to *Lachesis muta* (South American bushmaster) snake venom. Dias L<sup>1</sup>, Rodrigues MAP<sup>1</sup>, Inoue BR<sup>1</sup>, Rennó AL<sup>1</sup>, Panunto PC<sup>1</sup>, Rodrigues RL<sup>1</sup>, Melgarejo AR<sup>2</sup>, Hyslop S<sup>1</sup> <sup>1</sup>FCM-Unicamp – Farmacologia, <sup>2</sup>IVB – Zoologia Médica

**09.137** Study of potential analgesic/anti-inflammatory ethanolic extract from different parts of the species *Plectranthus neochilus*. Trindade S, Azeredo JA, Cevada BA, Calheiros AS, Bozza PT, Castro-Faria-Neto HC, Frutuoso VS IOC-Fiocruz – Imunofarmacologia

**09.138** Assessment of cytotoxicity of polar and nonpolar fractions obtained from the latex of the plant *Synadenium umbellatum* in C6/36 cells. Ferreira PAB, Silva TFB, Penha JR, Pereira AS, Moreli ML, Gaban L, Ramos CDL UFG

**09.139** Viscoelastic properties of cells exposed to synthetic natriuretic peptide of *Crotalus durissus cascavella* venom. Neto JO<sup>1</sup>, Ferreira MZJ<sup>2</sup>, Silveira JAM<sup>3</sup>, Monteiro HSA<sup>3</sup>, Alencar AM<sup>4</sup>, Evangelista JSAM<sup>1</sup> – <sup>1</sup>FV-UFC – Histology of Snake Venoms and Toxic Plants, <sup>2</sup>FEEC-Unicamp – Micro-Wave and Optics, <sup>3</sup>UFC – Pharmacology of Venoms and Toxins, <sup>4</sup>IF-USP – Molecular Physiology and Microreologia

**09.140** Spasmolytic action of *Solanum paniculatum* L. on guinea pig ileum involves modulation positive of K<sup>+</sup> channels. Pereira JC<sup>1</sup>, Vasconcelos LHC<sup>1</sup>, Souza ILL<sup>1</sup>, Ferreira PB<sup>1</sup>, Sampaio RS<sup>1</sup>, Araujo LCC<sup>1</sup>, Silva TMS<sup>2</sup>, Cavalcante FA<sup>3,1</sup>, Silva BA<sup>1</sup> <sup>1</sup>UFPB, <sup>2</sup>DCM-UFRPE, <sup>3</sup>DFP-UFPB

**09.141** Evaluation of antibacterial and antifungal activity of chromatographic fractions obtained from the latex of *Synadenium umbellatum* Pax plant. Martins TMM<sup>1</sup>, Gaban L<sup>2</sup>, Braoios A<sup>3</sup>, Ramos CDL<sup>4</sup> <sup>1</sup>LSC, <sup>2</sup>UFG – Patologia, <sup>3</sup>UFG – Microbiologia, <sup>4</sup>UFG – Farmacologia

**09.142** Effect of centuroides Margaritatus scorpion venom on cardiac hemodynamics in anesthetized rats. Silva APG<sup>1</sup>, Bindá AH<sup>2</sup>, Valencia JMB, Vidal JTB<sup>3</sup>, Cabral PHB<sup>2</sup>, Nascimento NRF<sup>1</sup>, Fonteles MC<sup>1</sup>, Santos CF<sup>1</sup> <sup>1</sup>ISCB-UECE, <sup>2</sup>UFC – Farmacologia, <sup>3</sup>UniCauca – Farmacologia

**09.143** Evaluation of the leishmanicidal activity and toxicity of bixin concentrate obtained of *Bixa Orellana* L. Vilar DA<sup>1</sup>, Soares MSAV<sup>1</sup>, Brito MT<sup>2</sup>, Gonzaga JCO<sup>3</sup>, Guimarães ARBV<sup>3</sup>, Nêris PLN<sup>2</sup>, Oliveira MR<sup>2</sup>, Barbosa Filho JMB<sup>2</sup>, Sobral MV<sup>2</sup> – <sup>1</sup>UFRN – Desenvolvimento e Inovação Tecnológica de Medicamento, <sup>2</sup>UFPB – Produtos Naturais e Sintéticos Bioativos, <sup>3</sup>UFPB – Farmácia

**09.144** Vasorelaxant effect of gallic acid in rat thoracic aorta. Oliveira LM, Oliveira TS, Bastos AM, Costa EA, Filgueira FP, Ghedini PC UFG – Ciências Fisiológicas

**09.145** *Bothrops fonsecai* snake venom toxicity and the use of commercial antivenom as a pharmacological tool. Collaço RCO<sup>1</sup>, Tamascia ML<sup>1</sup>, Silva IRF<sup>1</sup>, Cogo JC<sup>2</sup>, Rocha T<sup>3</sup>, Hyslop S<sup>1</sup>, Sanny CG<sup>4</sup>, Randazzo-Moura P<sup>5</sup>, Rodrigues-Simioni L<sup>1</sup> – <sup>1</sup>Unicamp – Farmacologia, <sup>2</sup>Univap – Estudos da Natureza, <sup>3</sup>USF, <sup>4</sup>OSU – Health Sciences, <sup>5</sup>PUC-SP – Farmacologia

**09.146** Spasmolytic effect of galetin 3,6-dimethyl ether involves histaminergic receptor antagonism and Ca<sup>2+</sup> influx blockade on guinea pig ileum. Medeiros MM<sup>1</sup>, Vasconcelos LHC<sup>1</sup>, Souza ILL<sup>1</sup>, Silva MCC<sup>1</sup>, Araujo LCC<sup>1</sup>, Ferreira PB<sup>1</sup>, Santos BVO<sup>2</sup>, Cavalcante FA<sup>3</sup>, Silva BA<sup>2</sup> <sup>1</sup>UFPB, <sup>2</sup>DCF-UFPB, <sup>3</sup>DFP-UFPB

**09.147** Study of the gastroprotective activity of *Mauritia flexuosa* oil in acute model of ethanol-induced gastric ulcer in mice. Queiroz BCSH, Gomes AF, Sousa JA, Sousa GS, Neto BM FSA – Farmacia

**09.148** Functional chromatography as a strategy of target-directed prospection of bioactive natural compounds. Jimenez PC<sup>1</sup>, Torres MCM<sup>2</sup>, Pessoa ODL<sup>2</sup>, Yeh K<sup>3</sup>, Chapman E<sup>3</sup>, La Clair JJ<sup>4</sup>, Costa-Lotuf LV<sup>5</sup> <sup>1</sup>Unifesp – Ciências do Mar, <sup>2</sup>UFC – Química Orgânica e Inorgânica, <sup>3</sup>University

of Arizona – Pharmacy, <sup>4</sup>Xenobe Research Institute, <sup>5</sup>UFC – Fisiologia e Farmacologia

**09.149** Cardiovascular actions of a cysteine-rich protein isolated from *Bothrops jararaca* snake venom. Tamascia ML, Silva IRF, Mocoso JAR, Antunes E, Hyslop S FCM-Unicamp – Pharmacology

**09.150** Pharmacological evaluation of standardized extract from *Cocos nucifera* L. (Palmae) *in vitro* and *in vivo*. Freitas RB<sup>1</sup>, Freitas LBN<sup>1</sup>, Lima EBC<sup>2</sup>, Vasconcelos SMM<sup>2</sup>, Leal LKAM<sup>1</sup> <sup>1</sup>CEFAC-UFC –, <sup>2</sup>UFC – Fisiologia e Farmacologia

**09.151** Anti-inflammatory activity of the extract of *Croton adamantinus* Müll. Arg. (Euphorbiaceae). Santos SM, Mendes RFV, Muniz RP, Silva METM, Domingos RF, Guerra ASHS, Oliveira TB, Silva TG, Albuquerque JFC, Ximenes RM UFPE – Antibióticos

**09.152** Effects of synthetic natriuretic peptide of *Crotalus durissus cascavella* venom in blood pressure and heart rate of rats. Lima DEV<sup>1</sup>, Silveira JAM<sup>2</sup>, Rodrigues FAP<sup>2</sup>, Costa PPC<sup>2</sup>, Morais GB<sup>1</sup>, Evangelista JSAM<sup>1</sup>, Monteiro HSA<sup>2</sup> <sup>1</sup>UFC – Histology of Snake Venoms and Toxic, <sup>2</sup>LAFAVET-UFC – Physiology and Pharmacology

**09.153** Study on the renal effects of the *Tityus stigmurus* venom. Maia GMP<sup>1</sup>, Marinho AD<sup>2</sup>, Morais ICO<sup>3</sup>, Jorge RJB<sup>2</sup>, Silva NA<sup>4</sup>, Martins RD<sup>4</sup>, Sousa PCP<sup>2</sup>, Silveira JAM<sup>2</sup>, Jorge ARC<sup>2</sup>, Monteiro HSA<sup>2</sup> <sup>1</sup>UFC – Histology of Snake Venoms and Toxic Plants, <sup>2</sup>LAFAVET-UFC – Pharmacology of Venoms and Toxins, <sup>3</sup>LCC-UFC – Clinical and Toxicological Analyses, <sup>4</sup>UFPE – Zoology

**09.154** Cytotoxicity assessment of extracts obtained from actinomycetes recovered from the sediment of Paracuru Beach, Ceará, Brazil. Vasconcelos IMB<sup>1</sup>, Guimarães LA<sup>1</sup>, Ferreira EG<sup>1</sup>, Jimenez PC<sup>1</sup>,



Freitas HPS<sup>2</sup>, Sousa TS<sup>2</sup>, Pessoa ODL<sup>2</sup>, Lotufo LVC<sup>5</sup> <sup>1</sup>UFC – Ciências do Mar, <sup>2</sup>UFC – Química Orgânica e Inorgânica, <sup>3</sup>UFC – Fisiologia e Farmacologia

**09.155** Cytotoxic effect and induction of apoptosis by venom of *Bothropoides pauloensis* in MDCK cell line. Macambira KDS<sup>1</sup>, Marinho AD<sup>2</sup>, Morais ICO<sup>2</sup>, Jorge RJB<sup>2</sup>, Menezes RRPPB<sup>3</sup>, Sousa PCP<sup>2</sup>, Silveira JAM<sup>2</sup>, Lima DB<sup>3</sup>, Martins AMC<sup>3</sup>, Evangelista JSAM<sup>1</sup>, Monteiro HSA<sup>2</sup> <sup>1</sup>HISTOVESP-UFC – Histology of Snake Venoms and Toxic Plants, <sup>2</sup>LAFAVET – Pharmacology of Venoms and Toxins, <sup>3</sup>LCC-UFC – Clinical and Toxicological Analyses

## 10. Cancer and Cell Proliferation

**10.016** Role of Purinergic P2 receptors on proliferation and viability of esophageal cancer cells lines. Santos Jr AA<sup>1</sup>, Paccez JD<sup>2</sup>, Pinto LF<sup>3</sup>, Zerbini LF<sup>2</sup>, Morrone FB<sup>1</sup> – <sup>1</sup>PUCRS – Biologia Celular e Molecular, <sup>2</sup>ICGEB – Cancer Genomics, <sup>3</sup>INCa

**10.017** Cytotoxic potential of compounds isolated from *Hyptis carvalhoi*. Moura AF<sup>1</sup>, Araújo AJ<sup>1</sup>, Lima KSB<sup>2</sup>, Silveira ER<sup>2</sup>, Moraes MO<sup>1</sup>, Costa-Lotufo LV<sup>1</sup> <sup>1</sup>UFC – Fisiologia e Farmacologia, <sup>2</sup>UFC – Química Orgânica e Inorgânica

**10.018** Nor- $\beta$ -Lapachone PLGA microparticles: development, characterization and cytotoxicity activity. Feitosa ACS<sup>1</sup>, Costa MP<sup>1</sup>, Oliveira FCE<sup>1</sup>, Silva Júnior EN<sup>2</sup>, Dias GG<sup>2</sup>, Sales FAM<sup>3</sup>, Freire VN<sup>3</sup>, Pessoa CO<sup>1</sup>, Caetano EWS<sup>4</sup> <sup>1</sup>UFC – Fisiologia e Farmacologia, <sup>2</sup>UFMG – Química, <sup>3</sup>UFC – Física, <sup>4</sup>IFCE

**10.019** Evaluation of the effects of thalidomide-loaded biodegradable devices in solid Ehrlich tumor. Pereira BG<sup>1</sup>, Fialho SL<sup>1</sup>, de Freitas MAA<sup>2</sup>, De Souza CM<sup>3</sup>, Cassali GD<sup>3</sup>, Silva-Cunha A<sup>2</sup> <sup>1</sup>FUNED – Pharmaceutical and Biotechnological

Development, <sup>2</sup>UFMG – Pharmacy, <sup>3</sup>UFMG – General Pathology

**10.020** Much more than cell cycle arrest: the multitude of mechanisms induced by vincristine in glioma cells. Thome MP, Filippi-Chiela EC, Bueno e Silva MM, Lenz G UFRGS

**10.021** Antileukaemic and antioxidant properties of eugenol-derived isozaxolines. Mendonça DS<sup>1</sup>, Putarov NB<sup>2</sup>, Carvalho EM<sup>3</sup>, Aguiar AP<sup>2</sup>, Sampaio ALF<sup>1</sup> <sup>1</sup>Farmanguinhos-Fiocruz – Farmacologia Molecular, <sup>2</sup>IME – Síntese Orgânica, <sup>3</sup>Farmanguinhos-Fiocruz – Síntese

**10.022** Cytotoxicity evaluation of amazon plant extracts in cancer cell lines. Ramos INF<sup>1</sup>, Barreto LH<sup>1</sup>, Pinto LC<sup>1</sup>, Soares BM<sup>1</sup>, Uchoa AV<sup>1</sup>, Pinheiro ACV<sup>2</sup>, Silva MN<sup>2</sup>, Burbano RMR<sup>1</sup>, Montenegro RC<sup>1</sup> <sup>1</sup>UFPA – Citogenética Humana, <sup>2</sup>UFPA – Cromatografia Líquida

**10.023** Lepidotrichilins A and B, new protolimonoids with cytotoxic activity from *Trichilia lepidota* (Meliaceae). Freitas WR<sup>1</sup>, Terra WS<sup>2</sup>, Vieira IJC<sup>3</sup>, Filho RB<sup>3</sup>, Kanashiro MM<sup>1</sup>, Torres MCM<sup>4</sup> <sup>1</sup>UENF – Biologia do Reconhecer, <sup>2</sup>IFF-Cabo Frio, <sup>3</sup>UENF – Ciências Químicas, <sup>4</sup>UFC – Química

**10.024** Characterization of cytotoxic activity of compounds derived from major constituents of the cashew nut shell liquid in human oral squamous cell carcinoma. Araujo LAN<sup>1</sup>, Alves WG<sup>1</sup>, Matos NS<sup>1</sup>, Romeiro LAS<sup>1</sup>, Silveira D<sup>1</sup>, Santos ML<sup>2</sup>, Motoyama AB<sup>1</sup> <sup>1</sup>University of Brasília – Health Sciences, <sup>2</sup>UnB – Chemistry

**10.025** Anti-angiogenic activity of Bothropstoxin I from *Bothrops jararacussu* (jararacuçu) snake venom: Inhibition by a KDR fragment. Sousa NC, Lorenzetti R, Hyslop S Unicamp – Farmacologia

**10.026** Caulibugulone A induces apoptosis by mitochondrial pathway with ROS

**production: a potential antineoplastic candidate.** Silva MF<sup>1</sup>, Freitas WR<sup>1</sup>, Andreão A<sup>2</sup>, Miranda PCML<sup>3</sup>, Kanashiro MM<sup>1</sup> <sup>1</sup>UENF – Biology of Recognizing, <sup>2</sup>IFES-Aracruz, <sup>3</sup>Unicamp – Chemistry

**10.027 Cytotoxic activity of (-)-chlorizidine A and derivatives.** Guimarães LA<sup>1</sup>, Jimenez PC<sup>2</sup>, Rocha DD<sup>1</sup>, Pinheiro DP<sup>1</sup>, Hughes CC<sup>3</sup>, Fenical W<sup>3</sup>, La Clair JJ<sup>4</sup>, Costa-Lotufo LV<sup>1</sup> <sup>1</sup>UFC, <sup>2</sup>Unifesp, <sup>3</sup>University of California, <sup>4</sup>Xenobe Research Institute

**10.028 Evaluation of the antitumoral activity and toxicity *in vivo* of the cerium oxide and zinc oxide nanoparticles association.** Xavier AL<sup>1</sup>, Brito MT<sup>1</sup>, Pita JCLR<sup>1</sup>, Santos CCL<sup>2</sup>, Farias IAP<sup>3</sup>, Albuquerque AJR<sup>3</sup>, Keyson D<sup>2</sup>, Sampaio FC<sup>3</sup>, Antônio GS<sup>2</sup>, Abrantes RA<sup>4</sup>, Cruz RMD<sup>4</sup>, Gonzaga JCO<sup>4</sup>, Sobral MV<sup>1</sup> <sup>1</sup>UFPB – Natural Products and Bioactive Synthetics, <sup>2</sup>UFPB – Chemistry, <sup>3</sup>UFPB – Biotechnology, <sup>4</sup>UFPB – Pharmacy

**10.029 Fractionation guided by cytotoxicity of extract from *Palythoa caribaeorum*.** Costa AM<sup>1</sup>, Pinto SCL<sup>2</sup>, Pessoa ODL<sup>2</sup>, Wilke DV<sup>1</sup>, Costa-Lotufo LV<sup>1</sup>, <sup>1</sup>UFC – Fisiologia e Farmacologia, <sup>2</sup>UFC – Química Orgânica e Inorgânica

## **11. Clinical Pharmacology, Pharmacokinetics, Pharmacogenomics and Preclinical Toxicology**

**11.016 Infection by *Paracoccidioides brasiliensis* associated to use of adalimumab in arthritic patient: a case report.** Caldas LM, Brito IRV, Vieira CJAB, Yamasawa RH, Borges VM, Bueno AN HUAV-Unifenas

**11.017 *In silico* drug discovery approach for new candidates on the treatment of Paracoccidioidomycosis disease.** Marschalk C<sup>1</sup>, Seixas FAV<sup>2</sup>, Cotica ESK<sup>3</sup> <sup>1</sup>LNBio-CNPEN-Unicamp, <sup>2</sup>UEM – Biochemistry, <sup>3</sup>UEM – Micology

**11.018 Active pharmacovigilance and study of a new oral anticoagulant dabigatran in Brazilian public hospital specializing in cardiology.** Martins LB<sup>1</sup>, Almeida FVS<sup>2</sup>, Scaramello CBV<sup>1</sup> <sup>1</sup>UFF, <sup>2</sup>INC

**11.019 Characterization of CYP2E1 polymorphisms in patients receiving treatment for TB.** Santos EA<sup>1</sup>, Gonçalves JCS<sup>1</sup>, Fleury MK<sup>2</sup>, Silva JRL<sup>3</sup>, Estrela RCE<sup>1</sup> <sup>1</sup>FF-UFRJ – Fármacos e Medicamentos, <sup>2</sup>FF-UFRJ – Análises Clínicas e Toxicológicas, <sup>3</sup>UFRJ – Medicina

**11.020 Evaluation of acute toxicity and determination of DL<sub>50</sub> of a new derivative of ferulic acid.** Araruna Júnior AA<sup>1</sup>, Rêgo SC<sup>2</sup>, Mata AMOF<sup>2</sup>, Osório MS<sup>2</sup>, Taimo MRD<sup>3</sup>, Alencar MVOB<sup>3</sup>, Gomes Júnior AL<sup>3</sup>, Freitas RM<sup>3</sup>, Cavalcante AACM<sup>4</sup> <sup>1</sup>FSA, <sup>2</sup>Uninovafapi, <sup>3</sup>UFPI, <sup>4</sup>UFRGS

**11.021 Evaluation of amoxicillin generic brands by *in vitro* antibacterial activity method.** Ignácio L<sup>1</sup>, Silva MTG<sup>2</sup>, Batista TGF<sup>2</sup>, Ferraris FK<sup>1</sup>, Amendoeira FC<sup>1</sup> <sup>1</sup>INCQS-Fiocruz – Farmacologia, <sup>2</sup>INCQS-Fiocruz – Microbiologia de Produtos

**11.022 Evaluation of acute toxicity of HSE-07 in mice.** Mangueira VM<sup>1</sup>, Batista TM<sup>1</sup>, Sousa TKG<sup>1</sup>, Brito MT<sup>1</sup>, Beltrão DM<sup>1</sup>, Moura APG<sup>1</sup>, Souza HDS<sup>2</sup>, Souza RPF<sup>2</sup>, LIRA BF<sup>2</sup>, Sobral MV<sup>1</sup> <sup>1</sup>UFPB – Ciências Farmacêuticas, <sup>2</sup>UFPB – Química

**11.023 Behavioral evaluation in mice treated with Artemether encapsulated in nanocapsules.** Vidal AT, Souza ACM, Amancio GCS, Mosqueira VCF, Grabe-Guimarães A Cipharm-UFOP

**11.024 Comparative bioavailability study between two sublingual formulations of ketorolac (Tablets 10 mg and 30 mg) and an intramuscular formulation of ketorolac (injectable solution of 30 mg/mL) in healthy volunteers of both sexes.** Leite WS, Leite ALAS, Nascimento DF, Sales LC, Freire LM, Sena KS, Linhares AL, Gadelha

EC, Pontes AV, Rocha MBS, Frota Bezerra FA, Moraes MO, Moraes MEA <sup>1</sup>UFC – Cirurgia / Fisiologia e Farmacologia

**11.025 Pre-clinical monitoring of artemether-nanocapsules cardiotoxicity in rats.** Vidal-Diniz AT<sup>1</sup>, Grabe-Guimarães A<sup>2</sup>, Richard S<sup>3</sup>, Guimarães HN<sup>4</sup>, Andrade RP<sup>2</sup>, Borges RP<sup>2</sup>, Mosqueira VCF<sup>1</sup> <sup>1</sup>UFOP, <sup>2</sup>UFOP – Farmácia, <sup>3</sup>Université Montpellier – Physiologie & Médecine, <sup>4</sup>UFMG – Engenharia Elétrica

**11.026 Evaluation of biochemical and hematological parameters of the acute administration of carvacryl acetate in mice.** Oliveira RAM<sup>1</sup>, Oliveira GLS<sup>1</sup>, Saldanha GB<sup>2</sup>, Sousa DP<sup>3</sup>, Freitas RM<sup>1</sup> <sup>1</sup>UFPI, <sup>2</sup>UFBA, <sup>3</sup>UFPB

**11.027 The relative bioavailability / bioequivalence of two formulations of metformin 850 mg tablets coated in healthy volunteers of both sexes on fed condition.** Sales LC, Leite ALAS, Nascimento DF, Freire LM, Sena KS, Leite WS, Linhares AL, Gadelha EC, Pontes AV, Rocha MBS, Frota Bezerra FA, Moraes MO, Moraes MEA UNIFAC-UFC – Fisiologia e Farmacologia – Unidade de Farmacologia Clínica ()

**11.028 Preliminary studies of the LASSBio-1425, a potential anti-atherogenic compound, on the male gamete of rat.** Mannarino LA<sup>1</sup>, Fumian MM<sup>1</sup>, Ribas JAS<sup>1</sup>, Maia RC<sup>2</sup>, Barreiro EJJ<sup>2</sup>, Brito FCF<sup>1</sup>, Marostica E<sup>1</sup> <sup>1</sup>UFF – Physiology and Pharmacology, <sup>2</sup>UFRJ – LASSBio

**11.029 Urodynamic effects of the combination of tamsulosin and daily tadalafil in men with lower urinary tract symptoms secondary to benign prostatic hyperplasia: a randomized, placebo-controlled clinical trial.** Sousa PRR<sup>1</sup>, Sales LC<sup>1</sup>, Santos LCO<sup>1</sup>, Silva BGB<sup>1</sup>, Marinho LB<sup>1</sup>, Pamplona TL<sup>1</sup>, Santos JMS<sup>1</sup>, Segundo SAS<sup>1</sup>, Silva Júnior JVM<sup>1</sup>, Cerqueira JBG<sup>1</sup>, Maia RR<sup>1</sup>, Gonzaga-Silva LF<sup>1</sup>, Regadas RP<sup>1</sup>



## Histórico Prêmio José Ribeiro do Valle

O Prêmio José Ribeiro do Valle, concedido anualmente pela Sociedade Brasileira de Farmacologia e Terapêutica Experimental, foi instituído em 1998 em parceria com a *Eli Lilly do Brasil*. Esta parceria vigorou até 2006 e, a partir de 2009, o prêmio passou a ser patrocinado pela Biolab-Sanus Farmacêutica. Este prêmio objetiva identificar e premiar jovens investigadores (até 35 anos) coautores principais dos cinco melhores trabalhos submetidos para apresentação no Congresso Brasileiro de Farmacologia daquele ano e inscritos ao prêmio. Os finalistas apresentam seus trabalhos na forma de Comunicação Oral e são arguidos, em sessão pública especial, realizada durante o congresso, por Comissão Julgadora (3 membros) constituída por pesquisadores seniores, especialistas nas diferentes áreas da Farmacologia. Nestes 16 anos da vigência do prêmio, os seguintes concorrentes obtiveram o primeiro lugar:

- 1998 – Maria Martha Campos (UFSC – Orientador: João Batista Calixto)
- 1999 – José Eduardo da Silva Santos (UFSC – Orientador: Jamil Assreuy)
- 2000 – Ana Paula Villela Dantas (ICB-USP Orientador: Maria Helena Catelli de Carvalho)
- 2001 – Liliam Fernandes (ICB-USP Orientador: Maria Helena Catelli de Carvalho)
- 2002 – Isaias Glezer (ICB-USP Orientador: Cristoforo Scavone)
- 2003 – Juliano Ferreira (UFSC – Orientador: João Batista Calixto)
- 2004 – João Alfredo de Moraes (UERJ – Orientador: Thereza Christina Barja-Fidalgo)
- 2005 – Tiago Chiavegatti (Unifesp – Orientador: Rosely O. Godinho)
- 2006 – Ana Leticia G. Cabral Maragno (FMRP-USP – Orientador: Marcelo Damário Gomes)
- 2007 – Maria Fernanda de Paula Werner (UFSC – Giles A. Rae)
- 2008 – Ana Luiza Andrade de Paula Lopes (Unifesp – Orientador: Rosely O. Godinho)
- 2009 – Silvio Manfredo Vieira (FMRP-USP – Orientador: Fernando de Q. Cunha)
- 2010 – Vanessa Olzon Zambelli (Instituto Butantan – Orientador: Yara Cury)
- 2011 – Tatiana Paula Teixeira Ferreira (Fiocruz -- Patrícia Machado Rodrigues e Silva)
- 2012 – Maíra Assunção Bicca (UFSC – Orientador: João Batista Calixto)
- 2013 – Jaqueline Raymondi Silva (FMRP-USP – Orientador: Fernando de Q. Cunha)

A SBFTE, por meio deste prêmio, prima pelo reconhecimento do trabalho científico realizado por jovens pesquisadores e incentivo à ciência brasileira.



## Lecture abstracts

### Courses:

**Cancer: basic concepts, toxicity of chemotherapy, molecular basis of metastization and strategies of prospection of new anticancer candidates.**

O mini-curso consistirá de três aulas expositivas, cada uma com 50 min de duração, objetivando facilitar a compreensão do aluno acerca de aspectos gerais relacionados ao câncer, tais como: epidemiologia, complexidade biológica, modelos de estudo da toxicidade dos quimioterápicos antineoplásicos, mecanismos moleculares relacionados à metastatização e modelos de prospeção de novos fármacos antitumorais. Bibliografia básica recomendada: Weinberg, RA, *Biologia celular do câncer*, ed. Artmed, 864p., 2008; - Hannahan D & Weiberg, RA, 2000. The hallmarks of cancer, *Cell*, 100(1): 57-70; - Hannahan D & Weiberg, RA, 2011. Hallmarks of cancer: the next generation, *Cell*, 144(5):646-674.

**Essential Biostatistical Concepts to Pharmacology.** *Fundamentals of Biostatistics.*

The class is designed primarily to address basic and fundamental importance in the understanding of Biostatistics applied in the area of Pharmacology, defining statistical terms emphasizing the importance of studying the Biostatistics and why this topic is so relevant in scientific circles. Among the basic topics that will be covered in this Introductory class are: 1. The understanding of Probability and Normal Curve addressing the definitions of terms such as parametric and nonparametric; 2. The understanding of the meaning and of the importance of Descriptive and Inferential statistics on data collection to final

analysis; 3. The knowledge of the types of measurement scales and adopted measures (measures of Central tendency and Dispersion) in obtaining the experimental data and its applicability in the correct choice of statistical tests and 4. Discussion and relevance of statistical significance ( $p$  value) and biological significance. *Data analysis: Parametric tests.* This talk intends to present/discuss key aspects regarding parametric statistics, namely: 1) assumptions and logic of Student t-test and analysis of variance (ANOVA); 2) one-way, two-way and repeated-measures ANOVA; and 3) post-hoc tests. *Data analysis - nonparametric tests.* In this class we will discuss the main applications of nonparametric statistical analysis. At the end of the class we expect that the audience will be able to argue and answer two questions: 1. When do I choose a nonparametric test? 2. Which nonparametric test should I choose? In addition, It will be discussed how nonparametric data (measures of central tendency and variability) should be presented in a scientific article. The program of class will be 1. Nonparametric tests: the only choice for nominal variables; 2. nonparametric measures of central tendency and variability; 3. Discussion about the power of parametric and nonparametric tests and assumptions of parametric tests; 4. The experimental design as a determinant of nonparametric test; 5. Frequent experimental designs and respective nonparametric tests. Apoio financeiro: CNPq, UFSM, Fapergs

**Drug-receptor interaction: dimerization, alosterism and functional selectivity.** The concepts of receptor and drug-receptor interaction are essential to understand

important aspects of Pathophysiology and Pharmacodynamics. Therefore, this issue is constantly debated in events sponsored by our scientific Society (SBFTE) through courses that offer an opportunity to reach an audience of young people, graduate and undergraduate students. This year, our course aims to address less basic, more modern, aspect of this topic by addressing the questions of homologous or heterologous receptor dimerization, allosteric modulation and functional selectivity. After discussing the phenomena, and their pathophysiological implications, we will also discuss the strategies for identifying / quantifying them as well as their relevance, opportunities and challenges for the process of drug discovery.

## Conferences

**Why intermittent energetic challenges are good for the brain.** Mark P. Mattson, Krisztina Marosi, Ruiqian Wan, Ryan Wu and Aiwu Cheng. Laboratory of Neurosciences, National Institute on Aging Intramural Research Program, Baltimore, MD. 21224. Humans evolved in environments where food was not available ad libitum, and so possess robust adaptive physiological and behavioral responses to periods of food scarcity. Emerging research in this Laboratory and elsewhere has shown that intermittent fasting (IF; e.g., fasting for a period of 24 hours twice weekly) and vigorous exercise can increase numbers and strength of synapses and can enhance brain function (cognitive and sensory – motor performance) and mood. We find that the general mechanism by which IF and exercise benefit neurons is by challenging them by increasing their activation state and energy demand, which results in a coordinated

engagement of signaling pathways that promote neuroplasticity and cellular stress resistance. The pathways activated by exercise and IF include those involving brain-derived neurotrophic factor (BDNF), mitochondrial biogenesis, DNA repair and removal of oxidatively damaged proteins and organelles (autophagy). Peripheral changes in energy metabolism that occur during fasting and exercise may also contribute to their beneficial effects on the brain. In this regard, the depletion of glycogen stores in the liver triggers the mobilization of fatty acids from fat cells and the production of ketone bodies. Ketone bodies such as beta-hydroxybutyrate provide an alternative energy source for neurons and may also activate signaling pathways that enhance the ability of the brain to cope with stress. Our studies in animal models of chronic neurodegenerative disorders (Alzheimer's and Parkinson's diseases) and acute brain injury (stroke and severe epileptic seizures) demonstrate robust neuroprotective and neurorestorative effects of IF diets. IF protects the brain by bolstering antioxidant defenses and protein chaperone levels, and by suppressing inflammation. The implications of these findings for strategies for optimizing brain function and reducing the risk of neurodegenerative disorders will be described. Acknowledgement: Supported by the intramural research program of the National Institute on Aging.

**Mutualism between gut and the microbiota: An essential interaction for health and disease.** Claudio Fiocchi. Department of Gastroenterology and Hepatology, Digestive Disease Institute. Department of Pathobiology, Lerner Research Institute. The Cleveland Clinic Foundation, Cleveland, Ohio, USA



Microorganisms, comprehensively called the microbiome, represent a vital component of the world we live in, and they play a role in essentially all aspects of human physiology and pathophysiology. Therefore, qualitative or quantitative changes in the microbiome have a major impact on metabolism, nutrition, immunity and numerous other aspects of human physiology, ultimately determining whether health or disease will prevail. These events are particularly important in the gastrointestinal tract, where the bulk of microbes reside. A healthy intestine is considered to be in a state of “physiological inflammation” manifested by the rich infiltration of immune cells found all along the intestinal mucosa. This results primarily from exposure to the mother’s microbiota at the time of birth and the subsequent ingestion of foreign antigens. The mucosal immune system establishes a state of tolerance towards the gut microbiota, not by ignoring it, but by mounting an active and highly specialized response mediated by both innate and adaptive immune cells. This response – termed “immune tolerance” – occurs early in life and, if properly regulated in timing, amount and type, prevents an excessive reaction against luminal microorganisms that could cause tissue damage, while at the same allows the formation of effective defenses against exogenous or endogenous danger signals. Modern life style has had a fundamental impact on the gut microbiota through the widespread use of antibiotics, drugs, and food additives (xenobiotics). Equally important, if not even more, are the drastic dietary modifications that humans have introduced in the last century, a period of time when a “westernized” diet, rich in fats, sugars and calories, has been adopted by increasingly affluent

societies. Microbes and humans have evolved together for several millennia and have mutually benefitted from this interaction. However, the type of nutrition humans have adopted after the industrial revolution has reshaped the composition of the gut microbiota, imposing adaptations by the mucosal immune system that may result not only in localized inflammation, but dysregulated immune responses at the systemic level. In the intestine these immune abnormalities appear to be largely responsible for increasingly common inflammatory conditions, such as ulcerative colitis and Crohn’s disease. Equivalent abnormalities at the systemic level likely contribute to several of the chronic inflammatory and autoimmune conditions currently affecting humanity, including rheumatoid arthritis, asthma, psoriasis and several others. Most current therapies are still targeting immune cells and inflammatory mediators as a way to control inflammation, but other approaches are emerging that aim at re-establishing the natural equilibrium between the gut microbiota and the host. Among the latter are probiotics, prebiotics and synbiotics, but evidence is emerging indicating the dietary interventions may be the most effective and safest ways to restore the makeup of the gut microbiome and therefore health.

**Therapeutic potential of toxins: from bench discovery to “drugable” compound.**

Jan Tytgat. Toxicology and Pharmacology, University of Leuven (KU Leuven), Campus Gasthuisberg, O&N2, PO Box 922, Herestraat 49, 3000 Leuven, Belgium

Throughout millions of years of evolution, nature has supplied various organisms with a massive arsenal of venoms to defend themselves against predators or to hunt prey. Several invertebrates from

marine and terrestrial origin are a good example and comprise animals such as cone snails, sea anemones, spiders and scorpions. They have proven to be among the most prolific and versatile peptide engineers known in nature indeed. Venom peptide toxins have been shown to often specifically interact with voltage-gated ion channels or other membrane-bound cellular receptors, and impair their normal functioning. Because of their key role in the initiation and propagation of electrical signals in excitable tissue, it is not surprising that several isoforms of voltage-activated sodium and potassium channels (Navs and Kvs, respectively), but also nicotinic acetylcholine receptors (nAChR), are specifically targeted by many of these venom peptide toxins. Moreover, since several voltage-activated ion channels are also crucially involved in (human) channelopathies, a new opportunity has opened to consider peptide toxins, and their derivatives, as “drugable” compounds with therapeutic potential, or in other words to design toxin-based drugs with high selectivity, efficacy and as little undesirable side effects as possible.

In this lecture, evidence will be given of naturally occurring peptide toxins from several invertebrate venomous species (including gastropoda and arachnida), particularly interacting with specific Navs, Kvs or nAChR, followed by a peptide-mimetic strategy one can follow to refine and miniaturize such peptides to become lead compounds. As one example, we endeavored to characterize a set of entirely hypothetical peptides, whose sequences were inspired by the pharmacophore of mu-family type conopeptides on the one hand, and a spider toxin on the other hand, on a collection of membrane-bound targets

from vertebrates and invertebrates.

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**Neuroinflammation and chronic pain.** Ru-Rong Ji Departments of Anesthesiology and Neurobiology, Duke University Medical Center, Durham, North Carolina, 27710

Chronic pain, such as neuropathic pain, cancer pain, and inflammatory pain is a rising health problem in the world. Current analgesics primarily target pain transduction and transmission in neurons and have limited success in controlling disease progression. Accumulating evidence suggests that neuroinflammation drives chronic pain by inducing and maintaining peripheral sensitization in the peripheral nervous system (PNS) and central sensitization in the central nervous system (CNS). Neuroinflammation can be characterized by infiltration of immune cells, activation of glial cells, and production of inflammatory mediators in the PNS and CNS. Compared with systemic inflammation, neuroinflammation in the PNS and CNS is better associated with chronic pain states. Activation of glial cells such as microglia and astrocytes in the spinal cord results in the production of pro-inflammatory cytokines (TNF- $\alpha$ , IL-1 $\beta$ ) and chemokines (CCL2 and CXCL2), via activation of MAP kinase pathways (p38, JNK, and ERK) to promote chronic pain. Mechanistically, these pro-inflammatory cytokines and chemokines can powerfully modulate synaptic transmission in the pain circuitry, by enhancing excitatory synaptic transmission and suppressing inhibitory

synaptic transmission in spinal cord dorsal horn neurons. On the other hand, neuroinflammation also generates anti-inflammatory and pro-resolution lipid mediators such as resolvins (RvE1, RvD1, RvD2) and protectins (protectin D1). Resolvins and protectin not only act on immune and glial cells to promote the resolution of neuroinflammation but also act on neurons to normalize synaptic plasticity. As a result of these regulations on both glia and neurons, inflammatory and neuropathic pain in animal models can be effectively reduced by resolvins and protectin. Thus, targeting excessive neuroinflammation with pro-resolution mediators may offer new therapeutics for the treatment of chronic pain.

**Drugs and Drug Leads from Nature.** David J. Newman. Natural Products Branch, Developmental Therapeutics Program, DCTD, NCI-Frederick, P. O. Box B, Frederick, Maryland, 21702, USA

For at least the last 4000 years, humans have used “natural substances” as medicinal agents to treat diseases of both humans and animals. In the last 60 or so years, the use of single chemical compounds, sometimes from Nature has become the “rule”, and in the last 30 or so years, it appeared that synthetic chemical agents had superseded Nature as the source of medicinal agents for treatment of disease. However, this is actually not the case in all disease areas as will be shown during this presentation. In the areas of infectious and parasitic diseases and cancer, over 50% of all approved drugs, those approved by regulatory authorities, in the last 60 plus years (for infections) and from 1935 (for cancer), have come either directly or indirectly from the chemical structures of natural products.

Many examples will be presented covering a variety of diseases of man (and some

animals) showing that even today, in the era of high throughput screening and massive synthetic libraries of drug candidates, that materials from Nature are still of very significant value. It will also become evident that the sources of a significant number of modern natural products are not the “large organisms” from which they were first isolated, but are from a biodiversity that is not yet fully appreciated, the microbial world. Funding: Directly from the US Government via the annual budget of the National Institutes of Health

**From chemistry to pharmacology and back to chemistry: the history of a therapeutic cannabinoid.** Francisco Silveira Guimarães. Department of Pharmacology, Medical School of Ribeirão Preto and Center for Interdisciplinary Research on Applied Neurosciences (NAPNA), University of São Paulo, Brazil

The chemical structure identification of active principles present in plants is a crucial step in the development of new drugs. At the beginning of the 1960s, Raphael Mechoulam and co-workers identified delta-9-tetrahydrocannabinol (THC) as the main substance responsible for the subjective effects of *Cannabis sativa* derivatives. They also recognized that another major cannabinoid present in the plant is cannabidiol (CBD). Although structurally similar, these two compounds produce some very distinct effects. CBD has no abuse potential and can antagonize the psychotomimetic and anxiogenic effects produced by high doses of THC. These latter observations suggested that CBD could have antipsychotic and anxiolytic properties, a proposal that has been confirmed by preclinical and clinical studies. In addition, the therapeutic potential of CBD has largely increased in the last 10 years. Several mechanisms have been proposed

to explain its unique pharmacological profile, including blockade of anandamide metabolism/uptake, facilitation of 5HT1A-mediated neurotransmission and activation of TRPV1 receptors. More recently, studies from ours and other laboratories have been investigating CBD interference on brain cellular changes. Chronic administration of this drug increases hippocampal neurogenesis and prevents microglia activation induced by repeated treatment with an NMDA non-competitive receptor antagonist (MK801). These two mechanisms could help to explain the anxiolytic and antipsychotic effects of this drug.

The translation of this potential therapeutic profile into the clinic has been hampered by the need of using large p.o. doses of CBD, reflecting its low and variable bioavailability in humans. To overcome this problem, we are now back to chemistry. In collaboration with Mechoulam's group we are testing chemical modifications of the CBD molecule aimed at increasing the drug potency. One of these compounds, HU-474, has already been shown to be at least 30-fold more potent than CBD in animal models of psychiatric disorders, suggesting that this could be a promising pathway to the development of new therapeutic compounds. Financial support. Fapesp and CNPq

## Symposia

**Traditional knowledge inspired discovery of natural product-based therapeutics for cancer and neurological disorders.** Leslie Gunatilaka. Natural Product Center, School of Natural Resources & the Environment, College of Agriculture & Life Sciences, University of Arizona, Tucson, Arizona 85706, United States  
Traditional medicines in many parts of the world make use of medicinal plants

to treat a variety of diseases including cancer and neurological disorders that increasingly burden modern day society. In our studies directed towards discovery and development of natural product-based drugs to treat these diseases, we have screened extracts derived from plants of the Southwest United States and herbal supplements available in the United States in a panel of cell-based and functional assays including gene-expression and the heat-shock induction assays targeting androgen receptor-induced genes and the heat-shock response, respectively. Of those tested, extracts derived from two plants of the family Solanaceae, *Withania somnifera* (winter cherry; Indian ginseng; Ashwagandha) and *Physalis crassifolia* (yellow nightshade ground cherry) proved to be promising. Detailed chemical and biological investigations of these were undertaken because *Withania* and *Physalis* species are employed in traditional medicines in Asia and South America to treat cancer and neurological disorders. Bioactivity-guided fractionation of extracts derived from these two plants led to the isolation and identification of several steroidal lactones belonging to the withanolide class. Given their potential as lead molecules for drug discovery and development, we have developed a soil-less aeroponic technique for cultivation of these plants and efficient production of active withanolides in large quantities for animal and structure-activity relationship (SAR) studies. Our studies suggest the potential of withanolides as anticancer and anti-neurodegenerative agents and the possibility of modulating their biological activities by modification of the withanolide structural scaffold that may lead to natural product-based therapeutics for cancer and neurological disorders. This work was supported by

the grants from U.S. National Cancer Institute/National Institutes of Health, U.S. Department of Agriculture, and Arizona Biomedical Research Commission.

**nNOS as a target for the treatment of vascular dysfunction in hypertension and atherosclerosis.** Virginia Soares Lemos – Universidade Federal de Minas Gerais

Endothelium-dependent vasodilation is mainly attributed to endothelial nitric oxide synthase (eNOS)-derived NO production. However, we have shown that neuronal nitric oxide synthase (nNOS) is constitutively expressed in the endothelium of the mouse aorta and mesenteric artery. Moreover, we have shown that nNOS-derived  $H_2O_2$  contributes in a significant way to the vascular relaxation. Reduced NO availability has been described as key mechanism responsible for endothelial dysfunction in atherosclerosis and hypertension. Recently, we have shown that endothelial nNOS-derived  $H_2O_2$  production is impaired and contributes to endothelial dysfunction in ApoE<sup>-/-</sup> mice aorta and DOCA-Salt hypertensive mice mesenteric arteries. Therefore, the present study provides evidence for an important role of nNOS in vascular function. Additionally, these results point to a new mechanism for endothelial dysfunction in atherosclerosis and hypertension and may represent a novel target to expand the therapeutic strategy in vascular diseases. Financial Support: CNPq and FAPEMIG

**Mass spectrometry on drug development: from the structural elucidation to imaging generation** Norberto Pepporine Lopes (USP)  
The structural elucidation of increasingly small quantities of organic compounds is a routinely required task of the chemist, especially in natural product, synthetic organic, biogeochemical, and medicinal chemistry research laboratories. Among the analytical tools available, there is a

wide variety of spectroscopic and spectrometric techniques. In recent years, developments in these techniques have allowed the analyst to obtain valuable structural information of a given compound at low concentrations (at high sensitivity) and in an increasingly short time period.

Each analytical method provides different, complementary structural information about a given compound. When it comes to mass spectrometry (MS), it is possible to obtain data regarding the molecular weight and/or the molecular formula of compounds, the presence of heteroatoms, and the presence of functional groups, depending on the characteristics of the mass spectrometer. Tandem mass spectrometry (MS/MS) is also able to provide additional structural information through fragmentation of the compound of interest. Therefore, MS and MS/MS are powerful tools for the structural elucidation of a wide range of organic compounds. In this talk we present an overview of the basic decomposition reaction for natural products and the perspective for the tissues imaging generation and search for a new activity metabolites.

**Discovery, design and mechanism of next generation proteasome inhibitors for cancer chemotherapy.** Daniela Barretto Barbosa Trivella<sup>1</sup> <sup>1</sup>National Center for Research in Energy and Material (CNPEM), Brazilian Biosciences National Laboratory (LNBio) – Campinas, SP Brazil

The proteasome complex is a validated target against cancer. Two drugs, carfilzomib and bortezomib, are currently available on the market. However, there still problems, such as resistance, toxicity, and distribution with these inhibitors. Therefore, the discovery and development of next generation proteasome inhibitors are necessary. In this talk we will

introduce new strategies to the discovery of next generation proteasome inhibitors, going from natural product screening of focused libraries, to the rational design of new molecules. New mechanisms of proteasome inhibition will be presented, using a set of biochemical data and crystal structures. Financial Support: FAPESP

**High dietary fat intake compromises blood brain barrier structural and immunological integrity – a link to cerebrovascular disease?**

Egle Solito  
William Harvey Research Institute, Barts and The London, Queen Mary's School of Medicine and Dentistry, London, UK  
Metabolic syndrome describes a cluster of conditions associated with increased prevalence and severity of cardiovascular disease/ischemic stroke, many of which are linked with dietary fat intake. Disturbances in blood-brain barrier (BBB) integrity contribute to the onset and progression of neurodegenerative conditions including Alzheimer's disease (AD) and vascular dementia (VaD). Whilst aging is positively associated with the risk of both AD and VaD, this may reflect the effects of chronic modulators of vascular function such as diet. Importantly, metabolic imbalance has recently been related to detrimental alterations in BBB integrity and function (1). Consequently, we investigated the effects of orchestrated dietary misbalance induced by a High Fat Diet (HFD) on the BBB and its immunoresponsiveness. C57Bl/6 mice were put under HFD for 10 weeks and BBB permeability was assessed *in vivo*. Data showed higher permeability in HFD animals compared with those receiving a normal diet, with peripheral inflammation (modelled by LPS treatment) triggering higher cerebrovascular albumin leakage. Immunologically, HFD animals presented a misbalanced Th1:Th2 cell ratio together

with higher T cell migration through an inflamed brain endothelium measured *in vitro*. We have previously shown the protein annexin A1 (ANXA1) to be an important mediator of BBB tightness (2), and the effects of HFD were significantly more pronounced in ANXA1 null mice. More importantly, HFD induced a clear down regulation in ANXA1 expression in both cerebrovascular endothelium and in T cells, resembling an early aging phenotype. These data thus impact on our understanding of the pathophysiological changes occurring during HFD, but, as ANXA1 is modulated by both HFD and aging, identification a possible new approach for therapeutic exploitation. (*We are grateful to ARUK and QMUL-for financial support*)  
References: (1) Takechi R, Pallegage-Gamarallege MM, et al. (2012) Neurodegener Dis. 2013;12:125-35. (2) Cristante E, McArthur S, Solito E. (2013) Proc Natl Acad Sci U S A. 2013-Future Article-110(3):832-41.

**Crosstalk between glucocorticoid-induced proteins GILZ and Annexin A1 in the context of resolution of acute inflammation.**

Lirlândia P. Sousa\*  
Departamento de Análises Clínicas e Toxicológicas - Faculdade de Farmácia, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil.

Resolution of inflammation is an active and continuous process with production and activation of biochemical mediators and signaling pathways to ensure rapid and successful restoration of tissue homeostasis. During the resolving phase of inflammation, multiple pro-resolving molecules are produced to temper the inflammatory response and guarantee the return to homeostasis. One of the most important endogenous pro-resolution pathways is that mediated by glucocorticoids (GCs) produced by the

adrenal glands. By exploiting pharmacologically these physiological effects, GCs are among the most important drugs that have been developed for the treatment of many inflammatory diseases. However, metabolic side effects of GCs limit their therapeutic application. Thus, there is a growing interest in the understanding the effects of GC-induced proteins that may allow dissociation of GC anti-inflammatory effects from their adverse metabolic effects. Our group we have explored the pro-resolving ability of two GC induced proteins named Annexin A1 (AnxA1) and GC-induced leucine zipper (GILZ), which have shown anti-inflammatory properties in several experimental models of inflammation. In this presentation, we will discuss the role of endogenous GILZ on the natural and induced resolution of acute inflammation. Moreover, since GILZ mediates AnxA1 anti-inflammatory activity in macrophages we will discuss the relationship between GILZ and AnxA1 in the resolution of neutrophilic inflammation. Financial Support: Fapemig, CNPq, CAPES and PRPq-UFMG

**Control by caffeine of mood and memory processes – role of adenosine  $A_{2A}$  receptors.**

Paula M. Canas<sup>1</sup>, Daniel Rial<sup>1</sup>, Ana Patrícia Simões<sup>1</sup>, Nélío Gonçalves<sup>1</sup>, João Pedro Lopes<sup>1</sup>, Samira G.Ferreira<sup>1</sup>, Henrique B.Silva<sup>1</sup>, Nuno J.Machado<sup>1</sup>, Francisco Queiroz<sup>2</sup>, Cristina Lemos<sup>1</sup>, Manuella P.Kaster<sup>2</sup>, Geanne Matos<sup>3</sup>, Lisiane O.Porciúncula<sup>4</sup>, Luisa V.Lopes<sup>5</sup>, Angelo R.Tomé<sup>1</sup>, Ricardo J.Rodrigues<sup>1</sup>, Paula Agostinho<sup>1,6</sup>, Rodrigo A. Cunha<sup>1,6</sup>

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Adenosine assists encoding information salience through a combined activation of inhibitory  $A_1$  and facilitatory  $A_{2A}$  receptors ( $A_{2A}R$ ). This brain modulation system is imbalanced in stressful conditions, with increased  $A_{2A}R$  density and decreased  $A_1R$  density. Neuroprotection is afforded by repeated caffeine consumption (adenosine receptor antagonist), which prophylactically prevents depression, suicide ideation and memory deficits, namely in aging and Alzheimer's disease (AD). In animal models of AD,  $A_{2A}R$  blockade prevents memory deficits and synaptic plasticity in hippocampal circuits and this neuronal  $A_{2A}R$  activation depends on ATP-derived adenosine. Neuronal  $A_{2A}R$  also control memory and mood deficits upon chronic stress and  $A_{2A}R$  blockade can actually therapeutically revert these installed aberrant phenotypes. Likewise, the blockade of  $A_{2A}R$  can also therapeutically revert the memory deficits characteristic of a triple transgenic mouse model of AD. The mood/memory normalizing impact of neuronal  $A_{2A}R$  blockade is further highlighted by the prevention of fear memory and amygdalar synaptic plasticity. Notably, the density of  $A_{2A}R$  is increased in animal models of brain disease, as well as in aged humans and the over-expression of  $A_{2A}R$  or the over-activation of  $A_{2A}R$  is sufficient to trigger memory deficits. Overall these findings unveil a critical role of  $A_{2A}R$  controlling synaptic plasticity to impact on dysfunction and damage of brain circuits, with a potential therapeutic interest to manage mood and memory impairments. Supported by DARPA, FCT, QREN, NARSAD, CAPES, CNPq-Ciência sem Fronteiras

**A coffee break for age-related cognitive deficits.** Lisiane O. Porciúncula (UFRGS)

Chronic consumption of caffeine has been associated with prevention of age

cognitive decline and mnemonic deficits in experimental models of dementia. On the other hand, some data revealed behavioral alterations and modifications in synaptic proteins and behavioral by caffeine intake during brain development.

#### **Adenosine A2A receptors as target to manage non-motor symptoms of Parkinson's disease**

Rui D. S. Prediger<sup>1,3</sup>, Adalberto A. Castro<sup>2,3</sup>, Daniel Rial<sup>1,3</sup>, Pedro Garção<sup>3</sup>, Angelo R. Tomé<sup>3</sup>, Paula Canas<sup>3</sup>, Attila Köfalvi<sup>3</sup>, Carla I. Tasca<sup>2</sup>, Rodrigo A. Cunha<sup>3</sup> <sup>1</sup>Departamento de Farmacologia, <sup>2</sup>Departamento de Bioquímica, Universidade Federal de Santa Catarina, Florianópolis - SC, Brazil. <sup>3</sup>CNC - Center for Neuroscience and Cell Biology, University of Coimbra, Coimbra, Portugal. Growing body of evidence indicates that cognitive (mainly working and procedural memory) deficits precede the classical motor symptoms in Parkinson's disease (PD). Non-motor features of PD respond poorly to dopaminergic medication and represent a major unmet clinical need. Convergent epidemiological and pre-clinical data suggest that the blockade of adenosine A2A receptors (A2AR) by caffeine or selective antagonists may confer neuroprotection against the underlying dopaminergic neuron degeneration, and influence the onset and progression of PD. In the current study we tested if the pharmacological or genetic blockade of A2AR could alleviate the cognitive symptoms observed in an animal model of PD based on the intranasal (i.n.) administration of MPTP. C57BL/6 mice infused with MPTP displayed working and procedural memory deficits without the emergence of alterations in motor performance, which were associated with a significant reduction of tyrosine hydroxylase (TH) density in the prefrontal cortex (PFC), striatum and substantia nigra. Moreover,

the release of both glutamate and dopamine in the PFC, but not in the striatum, was impaired in MPTP-treated mice. Electrophysiological studies also indicated marked impairments on neuroplasticity events following i.n. MPTP administration. The genetic deletion or pharmacological blockade of A2AR prevented these behavioral and neurochemical impairments induced by MPTP administration. These findings indicate that adenosine A2A receptors emerge as promising therapeutic target for the management of cognitive symptoms associated to early phases of PD, possibly acting through the modulation of the frontocortical dopamine and glutamate neurotransmission. Financial support: CNPq (Brazil), CAPES (Brazil), FAPESC (Brazil), FC

#### **ATP P2Y1 receptors control cognitive deficits and neurotoxicity induced by brain ischemia.**

Geanne Matos de Andrade. Federal University of Ceará:

ATP is a pleiotropic cell-to-cell signaling molecule in the brain that functions through activation of the P2 receptors (P2R), encompassing ionotropic P2XR or metabotropic P2YR. ATP fulfills a major role as a danger signal, and the genetic or pharmacological blockade of P2 receptors (P2R) has been shown to afford protection in animal models of diverse brain diseases such as ischemia, traumatic brain injury, mood disorders or addiction. This neuroprotection has been claimed to involve different subtypes of P2R and to result mainly from the control of neuroinflammation and astrogliosis rather than a direct protection against neuronal damage. Previous studies have implicated different P2R, namely P2Y1R, in the control of ischemic brain damage, but it remains to be defined if P2Y1R antagonists also alleviate the behavioral impairments associated with brain



ischemia. In this work, we investigated if the P2Y<sub>1</sub>R-mediated neuroprotection against ischemia-induced cognitive deficits mainly involve a control of neurons, astrocytes or microglia. Adult male mice subject to permanent middle cerebral artery occlusion (pMCAO) displayed an infarcted cortical area, decreased neurological score with decreased working and reference memory performance, accompanied by neuronal damage, astrogliosis and microgliosis. All of these changes were attenuated by intracerebroventricular pre-treatment with the generic P<sub>2</sub>R antagonist PPADS (0.5–1.0 nmol/μL). In contrast, the selective P2Y<sub>1</sub>R antagonist MRS2500 (1.0–2.0 nmol/μL) afforded equivalent behavioral benefits but only prevented neuronal damage but not astrogliosis or microgliosis upon pMCAO. These results indicated that P2Y<sub>1</sub>R-associated neuroprotection mainly occurred through neuronal mechanisms, whereas other P<sub>2</sub>R were also involved in the control of astrocytic reactivity upon brain injury. Financial support: CNPq, CAPES

#### **Studying cancer resistance in cell culture.**

Andrew O. Silva, Franciele C. Kipper and Guido Lenz Dept. de Biofísica e Centro de Biotecnologia, Universidade Federal do Rio Grande do Sul (UFRGS) The predictive power of cell culture in establishing the best therapeutic regimen for patients is very low. Here we set out to test treatment protocols of six gliomas cell lines and primary glioma cultures to better mimic therapeutic responses. For this, we treated these cells with clinically relevant regimen of chemotherapeutic agent for 5 days and followed the number of cells for at least 30 days. We established the mechanisms activated by cells in response to Temozolomide (TMZ, 50μM), the main agent used for glioma treatment. This includes cell cycle arrest,

senescence, autophagy, apoptosis and necrosis. TMZ lead to sharp reduction in the number of cells for up to 12 days, followed by a recuperation of the cell proliferation to a similar rate of the untreated cells. Thereafter we combined TMZ with eleven different agents that could be used in glioma treatment and established that combination with vinblastine and mebendazole lead to a complete absence of cells after 30 days in the cell lines that were partially sensitive to TMZ but not to TMZ resistant cell lines. These agents alone, despite inducing acute cytotoxicity, lead to the appearance of resistance. Interestingly, these combinations also were successful in primary glioma cultures. With this we expect to find better combinations and regimens to overcome resistance and provide better clinically relevant information based on the long term sensitivity of cultures to chemotherapeutic agents. Financial support: FAPERGS, CNPq e CAPES.

**The oncogenic factor TBX2 confers cisplatin resistance in cancer cells through a novel role in the DNA repair pathway** S. Wansleben, E. Davis, J. Peres and S. Prince Department of Human Biology, Faculty of Health Sciences, University of Cape Town, Observatory, 7925, Cape Town, South Africa.

The emergence of drug resistant tumours which are able to escape cell death pose a major problem in the treatment of cancers. Tumours develop resistance to DNA damaging chemotherapeutic agents by acquiring the ability to repair their DNA. Combination therapies that induce DNA damage and disrupt the DNA damage repair process may therefore prove to be more effective against such tumours. The developmentally important transcription factor TBX2 has been suggested as a novel anti-cancer drug

target as it is overexpressed in several cancers and possesses strong anti - senescence and pro - proliferative functions. Importantly, we recently showed that when TBX2 is silenced we are able to reverse several features of transformation in both breast cancer and melanoma cells. Overexpression of endogenous TBX2 has also been linked to drug resistance and we have shown that its ectopic expression results in genetically unstable polyploidy cells with resistance to cisplatin. Whether the overexpression of endogenous TBX2 levels is associated with cisplatin resistance in TBX2 - driven cancers has however not been shown. To address this we have silenced TBX2 in a cisplatin resistant breast cancer cell line and we show that knocking down TBX2 sensitizes the cells to cisplatin by disrupting the ATM - CHK2 - p53 signalling pathway. Cell cycle analyses demonstrate that when TBX2 is knocked down there is an abrogation of an S - phase arrest but a robust G2/M arrest that correlates with a reduction in phosphorylated CHK2 and p53 levels. This prevents DNA repair resulting in TBX2 deficient cells entering mitosis with damaged DNA and consequently undergoing mitotic catastrophe. These results suggest that targeting TBX2 in combination with chemotherapeutic drugs such as cisplatin could improve the efficacy of current anti - cancer treatments

#### **Capturing the affective dimensions of chronic pain in preclinical models.**

Tamara King, Ph.D. Assistant Professor, Department of Biomedical Sciences, College of Osteopathic Medicine, Center for Excellence in the Neurosciences, University of New England, Biddeford, Maine, USA

Pain in humans is a multidimensional experience with cognitive, motivational,

and sensory components. Animal models with apparent relevance to clinical conditions have been developed and have formed the basis of our understanding of mechanisms associated with pain syndromes. While our knowledge of the neurobiology underlying pain has been immensely aided by the use of animal models, there has been increasing concern that these models are not sufficiently “predictive” to gain insight into mechanisms relevant to the human experience of pain. Most preclinical studies of pain have emphasized output measures that rely on reflexive responses to evoked stimuli. However, reflexive behaviors can often be observed in decerebrated animals, and therefore do not sufficiently capture important affective and motivational aspects of pain. In addition, evidence indicates that there are important mechanistic differences between evoked behavioral responses indicating hypersensitivity (e.g. tactile allodynia) and ongoing pain. Such divergence would serve to diminish potential translation between preclinical measures of evoked hypersensitivity and reports of persistent, underlying pain within the clinic. For these reasons, investigators involved in preclinical pain research have developed a number of novel strategies aimed at capturing features of pain that might have increased translational relevance. Such approaches are generally intended to measure features of pain without the need for an evoked reflexive withdrawal response. This presentation will highlight some of the recent advances in how “pain” is measured in the preclinical setting. Dr. King receives research support from a COBRE provided by the NIGMS (grant number P20GM103643 to Ian Meng) supporting The Center of Biomedical Research Excellence for the

Study of Pain and Sensory Function as well as from the Maine Cancer Foundation.

**Neuroimmune activation in the spinal cord enhances kynurenine pathway and accounts for the genesis of neuropathic pain.** Guilherme Rabelo de Souza - Ribeirao Preto Medical School-University of Sao Paulo (FMRP-USP)

There are growing bodies of evidence showing that after peripheral nerve injury innate and adaptive immune system activation in the spinal cord plays a crucial role in the induction and maintenance of neuropathic pain states. However, the mechanisms triggering these processes and the interaction between immune and neuronal systems that contribute to the genesis of neuropathic pain are not totally elucidated. In this talk, it will be present a novel mechanism that links immune system activation and central sensitization of spinal cord neurons after peripheral nerve injury. This mechanism is represented by IFN-gamma triggering spinal induction of kynurenine metabolic pathway that in turn enhances pain sensitivity.

Financial Support: CAPES and FAPESP

**Exploring new targets and mechanisms of orofacial neuropathic pain.** Juliana Geremias Chichorro. Departamento de Farmacologia, Universidade Federal do Paraná, Curitiba, PR, Brasil.

Neuropathic orofacial pain is a general term employed to describe a number of clinical syndromes, which may be spontaneous or triggered by local trauma or systemic disorders. Trigeminal neuralgia (TN) is a form of neuropathic orofacial pain characterized by severe, brief, stabbing recurrent episodes of pain within the distribution of one or more branches of the trigeminal nerve. International guidelines suggest that carbamazepine and oxcarbazepine are the

first-line drugs for pain control in TN, but none of the medical and surgical procedures currently available provides reliable and permanent pain relief. Thus, further knowledge into the mechanisms underlying this condition and new effective treatment strategies are clearly warranted. As the most accepted cause of TN is vascular-induced sensory nerve root compression, Vos and Maciewicz (1991) developed a rat model of trigeminal neuropathic pain produced by chronic constriction of the infraorbital nerve (CION), a branch of the trigeminal nerve. This model reproduces important aspects of TN, including signs of spontaneous pain, mechanical and thermal hyperalgesia. Our group has been used this model to investigate mechanisms and strategies to control orofacial neuropathic pain. We demonstrated that selective deletion of C fibers by trigeminal intraganglionic injection of resiniferatoxin prevented the development of heat and cold hyperalgesia induced by CION. The development of heat hyperalgesia after CION was also prevented by daily administration of vitamins of the B complex (B1, B6 or B12, alone or in combination). Additionally, daily treatment with B vitamins, alone or in combination provided a synergistic effect with a single sub-therapeutic dose of carbamazepine to alleviate heat hyperalgesia. Moreover, in vitro experiments of calcium imaging on HEK 293T cells transfected with TRPV1 receptors demonstrated that previous incubation of cells with B vitamins, alone or in combination, caused a significant reduction in the calcium influx induced by capsaicin, suggesting that B vitamins may cause desensitization of TRPV1 receptors. In line with this observation, heat hyperalgesia induced by capsaicin in naïve rats was markedly reduced by

previous B vitamins treatment. Altogether, these results suggest that TRPV1 receptors may represent the target for B vitamins-induced analgesia and that B vitamins could be an alternative or be used as adjuvant to control some aspects of pain in patients suffering from trigeminal neuralgia. Protocols approved by CEUA/BIO/UFPR # 456 and 471. Financial Support: CAPES, CNPq, DAAD, Fundação Araucária.

**G protein- and cytokine-mediated pathways to natriuretic peptide stimulated secretion.** Adolfo J. de Bold, OC, PhD, University of Ottawa Heart Institute and Department of Pathology and Laboratory Medicine, University of Ottawa, Ottawa, Ontario, Canada K1H 8M5.

The cardiac natriuretic peptide (NP) hormones ANF and BNP are secreted continuously at baseline levels from the heart atria until hemodynamic or neuroendocrine stimuli cause such secretion to increase either acutely or chronically over baseline. NP secretion has some noteworthy peculiarities. Using double label pulse chase studies we have shown that it is the newly synthesized hormone over that in the storage pool that is secreted upon stimulation of NP secretion. In addition, monensin, an ionophore that impairs protein sorting and transport in the trans-Golgi network, completely prevents stimulated, but not baseline, secretion of NP. These findings suggest a constitutive-like type of NP release whereby secretion is based on exocytosis of vesicles budding from immature granules. Secretion brought about by atrial muscle stretch is a pertussis toxin-sensitive process thus involving Gi/o signaling unlike stimulated secretion by secretagogues such as endothelin-1 that is known to involve Gq signaling. These are separate processes because the latter stimulation proceeds

unimpaired in pertussis toxin pre-treated atria. Using pharmacological inhibitors of proximal effectors of G $\alpha$ q including phospholipase C and protein kinase C inhibitors we found that basal ANF secretion was dramatically increased by the inhibitors. This is in line with earlier experiments showing that Ca<sup>+2</sup>-free perfusion in the isolated atria causes a very strong, reversible increase in ANF secretion in a manner that is contrary to most other endocrine cells. Expression of the G protein subunit G $\alpha$ o-1 is prominent in the atria as shown by immunocytochemistry and by differential expression profile analysis between rat atria and ventricles using oligonucleotide arrays. A conditional, heart-specific knockout of G $\alpha$ o in mice changed the atrial phenotype most notoriously by a change in the number and electron density of atrial granules. Cytokines such as IL-1 $\beta$  and TNF $\alpha$  selectively increase the expression and secretion of BNP through gene promoter effects both in vitro and in vivo in inflammation thus differentiating ANF and BNP that otherwise share biological properties, storage site and receptor. Overall, the control of secretion of NP is varied and appears tailored to respond uniquely to different challenges. (Supported by the Canadian Institutes of Health Research and the Ontario Heart and Stroke Foundation).

**Molecular mechanisms underlying the renal effects of uroguanylin.** Manassés Claudino Fonteles. Universidade Estadual do Ceará and Universidade Federal do Ceará, Fortaleza, Ceará.

Uroguanylin (UGN) is the member of guanylin family of peptides with the most pronounced effects in sodium balance homeostasis. This peptide is synthesized in the intestine and modulates electrolyte transport in the kidney by stimulating

diuresis, natriuresis and kaliuresis. We have demonstrated that UGN modulates sodium, bicarbonate and potassium transport in nephron segments. Our studies have shown that UGN inhibits NHE3-mediated bicarbonate reabsorption in proximal tubules and distal hydrogen secretion via  $H^+$ -ATPase and stimulates potassium secretion in distal tubule via maxi-K channels. The signaling mechanisms underlying UGN inhibitory effect on NHE3 activity is mediated by activation of both cGMP/PKG and cAMP/PKA signaling pathways which in turn leads to NHE3 phosphorylation and reduced NHE3 surface expression. Regarding the inhibition of  $H^+$ -ATPase mediated by UGN in distal tubules, our data have shown that this effect is dependent on cGMP/PKG pathway that leads to reduced surface expression of  $H^+$ -ATPase B1-subunit. Finally, our studies have demonstrated that cGMP/PKG pathway is also involved in stimulation of maxi-K channels by UGN, leading to increased potassium secretion. Therefore our studies shed light upon mechanisms by which guanylin peptides are intricately involved in the maintenance of salt and water homeostasis. Financial support: CNPq and FUNCAP

### **Role of guanylate cyclase agonists in the regulation of gastrointestinal function and treatment of gastrointestinal diseases**

Mark G. Currie (Ironwood Pharmaceuticals, USA)

Guanylate Cyclase C (GCC) is expressed almost exclusively in the intestinal epithelium of the small and large intestine on the luminal surface. The activity of this receptor is regulated by the endogenous hormones, guanylin and uroguanylin which are secreted into the intestinal lumen and then act locally to activate the GCC receptor. Our goal has been to develop an understanding of the

utility of guanylate cyclase agonists for the treatment of intestinal diseases, including irritable bowel syndrome with constipation (IBS-C) and chronic constipation (CC). These two conditions affect millions of patients and are associated with marked pain and discomfort. In the current talk, we will focus on the actions of linaclotide, a synthetic 14-amino acid peptide GCC agonist, on animal models of abdominal pain and intestinal transit and the relationship of these actions for the treatment of intestinal dysfunction in IBS-C and CC patients by examining the effect of linaclotide treatment on the abdominal symptoms associated with IBS-C, including abdominal pain.

### **Functional selectivity and assembly of GPCRs signaling complexes: New paths toward drug discovery.**

Michel Bouvier, Department of Biochemistry, Institute for Research in Immunology and Cancer, Université de Montréal, Canada

In recent years, it has become clear that G protein-coupled receptors (GPCRs) are not uni-dimensional switches that turn 'on' or 'off' a single signaling pathway. Instead, each receptor can engage multiple signaling partners to form dynamic complexes that can engage various downstream effector systems that may or may not involve G protein activation. Individual ligands can have differential efficacies toward specific subsets of the signaling effector repertoire that can be engaged by a given receptor. This phenomenon, known as ligand-biased signaling or functional selectivity, opens new opportunities for the development of new drugs with increased selectivity profiles and less undesirable effects. In an effort to better understand the structural and molecular basis of GPCR functional selectivity, we developed a diversity of biosensors based

on bioluminescence resonance energy transfer (BRET) that allow real-time monitoring of the interactions between GPCRs and multiple effectors as well as their downstream signaling events. To date we generated more than 30 BRET-based sensors that monitor various aspects of signaling. Their use revealed unexpected new signaling complexes and provide a new tool-set to monitor signal transduction from the membrane to the nucleus and open new avenues for the screening and profiling of drug candidates with favorable functional selectivity. Both orthosteric and allosteric ligands of receptors were found to have a high level of functional selectivity. Examples for the  $\beta$ -adrenergic, angiotensin, opioids and chemokine receptors will be discussed. At the molecular level, site-directed mutagenesis revealed that specific domains of receptors play crucial role for the activation of selective pathways. Mutant form of receptor can change the relative signaling selectivity of both balanced and biased ligands thus providing insights into the rational design of biased ligands with desired signaling properties.

**P2X7 receptor a valuable target in Nervous System from development to neurodegeneration.** M<sup>a</sup> Teresa Miras-Portugal. Department of Biochemistry, Universidad Complutense of Madrid, Spain.

P2X7 receptors are abundant at isolated presynaptic terminals from the mammalian central nervous system and exhibit increased activity in some neurodegenerative diseases, as occurs in Huntington disease (Díaz-Hernández et al. *FASEB J.* 2009; 23:1893-906). In neuronal cells, P2X7R induces exocytotic neurotransmitter release and at the same time cytoskeletal reorganization to favors vesicular dynamics and synaptic plasticity

(Gutiérrez-Martin J *Biol. Chem.* 2011; 286:11370-81). P2X7R is located at the end of growing axons in cultured hippocampal neurons and their inhibition promotes axonal growth, the same result is obtained by small hairpin RNA interference to knockdown the receptor. Besides, P2X7R over-expression significantly reduces axonal length (Díaz-Hernández et al. *J. Cell. Sci.* 2008; 121:3717-28; Puerto et al. *J. Cell. Sci.* 2012; 125:176-88).

The effect of P2X7 receptor can be observed *in vivo*, in animal models of epilepsy where its expression has been reported to be altered in the hippocampus following *status epilepticus*. Animals treated with antagonists of the P2X<sub>7</sub> receptor also displayed less hippocampal damage and neuroinflammatory changes, including reduced microglial responses and interleukin-1 $\beta$  levels. In summary, P2X7 receptor plays an important role in the pathophysiology of *status epilepticus* and represent novel target for seizure control and neuroprotection (Engel et al. *FASEB J.* 2012; 26:1616-28; Jiménez-Pacheco et al. *Epilepsia* 2013, 54: 1551-61).

Finally, P2X7 signaling participates in the processing of the Amyloid precursor protein (APP) to generate the A $\beta$ 42 peptide that is at the origin of the senile plaques characteristic of Alzheimer's disease (AD). Nonpathogenic and pathologic forms of APP processing, mediated by  $\alpha$ -secretase and  $\beta$ -secretase respectively, remain poorly understood. The *in vivo* approach to AD was possible with transgenic J20 mice model, expressing human APP mutant protein. This animal exhibits prominent amyloid plaques by the six months of life. *In vivo* inhibition of the P2X7R in J20 mice induced a significant decrease in the number of hippocampal amyloid plaques.

This reduction is mediated by increasing the proteolytic processing of APP through  $\alpha$ -secretase. The *in vivo* findings demonstrate for the first time the therapeutic potential of P2X7R antagonism in the treatment of familial Alzheimer's disease (*Díaz-Hernandez et al. Neurobiol Aging*;2012; 33:1816-28)

#### **Purinergic system in the M1 and M2 activation.**

Rafael F. Zanin 1 , Elizandra Braganhol 1 , Leticia S. Bergamin 1 , Fernanda B. Morrone 2 , Jean Sévigny 3 , Maria Rosa C. Schetinger 4 , Angela T. S. Wyse 1 and Ana Maria O. Battastini 1 . 1 Departamento de Bioquímica, ICBS, UFRGS, Porto Alegre, RS, Brasil; 2 Faculdade de Farmácia, PUCRS, Porto Alegre, RS, Brasil, 3 Centre de Recherche en Rhumatologie et Immunologie, Centre Hospitalier Universitaire de Québec; and Département de Microbiologie - Infectiologie et d'Immunologie, Faculté de Médecine, Université Laval, Québec, QC, Canada. 4 Departamento de Química, CCBE, UFSM, RS, Brasil.

Macrophages are key elements in the inflammatory process, exhibiting a spectrum of activation ranging from M1/pro - inflammatory to M2/anti - inflammatory phenotypes. Extracellular ATP can act as a danger signal whereas adenosine generally serves as a negative feedback to limit inflammation. Extracellular nucleotides modulate a variety of biological actions via purine receptors and their actions are controlled by the ectonucleotidases. In a recent study, we investigated the role of members of the ectonucleoside triphosphate diphosphohydrolase (E - NTPDase) family and ecto-5'-nucleotidase/CD73 (ecto-5'-NT) in the macrophages differentiation. Firstly, peritoneal mice macrophages were differentiated to M1 and M2 phenotypes by LPS or IL - 4, respectively. M1 and M2

phenotypes were characterized by evaluating the arginase/iNOS activities, Ym1 and FIZZ1 mRNA expression and cytokine production. Next, we showed that M1 macrophages presented a decreased in NTPDase1, - 3 and the ecto - 5' - nucleotidase expression while M2 macrophages showed an increased NTPDase1, - 3 and ecto - 5' - nucleotidase expression. The increased ATPase/ADPase and ecto - 5' - NT activities presented by M2 phenotype macrophages can drive the ATP rapidly to generation of adenosine, which is associated with anti - inflammatory and regeneration actions in immune cells. We also aimed to assess whether the differential expression of NTPDases can regulate the P2 signaling during macrophage differentiation. We showed that mRNA P2X7 expression was not altered during macrophages differentiation and that the M2 macrophages, which have a higher ATPase activity, were less sensitive to cell death when exposed to ATP. Considering these data, we suggested that the modulation of NTPDases during M1 and M2 differentiation could be important in the regulation of P2X7 - induced cell death, and we proposed that the changes in the ectoenzyme might allow macrophages to adjust their functions during the inflammatory set. Support: CAPES and CNPq; Dr. J. Sévigny was the recipient of an FRQS senior scholarship

#### **Purinergic signaling in vascular dysfunction.**

Claudia Lucia Martins Silva, PhD. Pharmacology and Inflammation Research Program, Biomedical Sciences Institute, Federal University of Rio de Janeiro, RJ, Brazil

ATP is released into the extracellular environment by several mammalian cell types as a response to physiological or pathophysiological stimuli. Extracellular

ATP acts as an autocrine or paracrine mediator, through the activity of different P2 purinoceptor subtypes. Moreover, ectonucleotidases (NTPDases) are involved in the metabolism of extracellular nucleotides, controlling their availability for purinoceptor activation. Both G protein-coupled P2Y receptors (P2YR) and ion-channel P2X receptors (P2XR) are expressed in endothelial cells (ECs), vascular smooth muscle cells and immune cells, where receptor activation triggers different signaling cascades, including those leading to vasodilation or vasoconstriction, as well as vessel remodeling, immune cell migration and EC apoptosis. The main purinoceptor subtypes expressed on mammalian ECs are P2Y<sub>1</sub>R, P2Y<sub>2</sub>R and P2X<sub>4</sub>R, although vessel- and species-specific differences in receptor subtypes exist. As shown by ours and other research groups, alterations in vascular P2 receptor signaling and NTPDases function contribute to endothelial dysfunction. P2Y<sub>1</sub> receptors participate in EC activation, which is essential for monocyte diapedesis. Also atherosclerotic lesions are reduced in P2Y<sub>1</sub>R/apolipoprotein E (ApoE) double knockout mice (compared to ApoE single knockout controls). Analysis of this double knockout model showed that P2Y<sub>1</sub>R contributes to the expression of endothelial adhesion molecules that mediate leucocyte recruitment during inflammation. In an intestinal inflammation model, our data show that increased expression of mesenteric EC NTPDase 2 triggers higher levels of extracellular ADP, a full agonist of P2Y<sub>1</sub>R, with subsequent endothelial P2Y<sub>1</sub>R-mediated monocyte adhesion. Short-term activation of endothelial P2X<sub>7</sub>R stimulates endothelial nitric oxide (NO) synthase activity, resulting in NO production and

vasodilation. In the same inflammation model, basal P2X<sub>7</sub>R expression is reduced by higher than normal levels of TGF- $\beta$ , resulting in a reduced NO synthesis. While leukocyte adhesion to lung ECs is abolished in P2Y<sub>2</sub>R<sup>-/-</sup> mice, P2Y<sub>2</sub>R up-regulation on coronary artery ECs induces intimal hyperplasia and monocyte/macrophage infiltration. Lastly, upon endothelial damage ATP released by activated leukocytes activates myocyte P2R, causing vasoconstriction. In conclusion, our group and others have produced considerable evidence in support of the notion that the pharmacological targeting of purinergic signaling might be effective to reduce vascular dysfunction in inflammatory diseases. Financial support: CNPq, FAPERJ



## Authors

### A

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| Ayres ASFSJ        | 02.012, 02.013            | Barbosa LN           | 09.015                                       |
| Ayres DDJ          | 02.012, 02.013            | Barbosa NBV          | 02.021, 09.025                               |
| Azeredo JA         | 09.137                    | Barbosa NVB          | 03.019                                       |
| Azevedo C          | 04.120                    | Barbosa R            | 02.056                                       |
| Azevedo JG         | 01.031                    | Barbosa-Filho JM     | 07.007, 07.016,<br>09.064                    |
| Azevedo MI         | 01.005                    |                      |                                              |
| Azevedo PSS        | 09.110                    | Barboza LN           | 09.019                                       |
| Azevedo R          | 04.014                    | Barboza R            | 04.057                                       |
| Azevedo RB         | 04.059                    | Barcellos J          | 09.073                                       |
| Azevedo-Santos APS | 04.057                    | Barcellos-de-Souza P | 04.030                                       |
| Azzolin VF         | 10.002                    | Barenco TS           | 01.025                                       |
|                    |                           | Barichello D         | 11.004                                       |
|                    |                           | Barison A            | 09.050                                       |
|                    |                           | Barja-Fidalgo TC     | 04.030, 04.031,<br>04.051, 04.083            |

## B

|                  |                                   |                    |                                                      |
|------------------|-----------------------------------|--------------------|------------------------------------------------------|
| Bacarin CC       | 02.020                            |                    |                                                      |
| Baciquete TF     | 09.014                            | Barra A            | 04.101                                               |
| Bagchi M K       | 07.013                            | Barreiro EJJ       | 04.082, 05.053,<br>06.029, 06.044,<br>08.003, 11.028 |
| Baggio CH        | 07.010, 09.051                    |                    |                                                      |
| Bakhle YS        | 02.016                            |                    |                                                      |
| Balarini CM      | 06.021                            | Barreto EO         | 04.050, 04.077                                       |
| Balbino AM       | 04.008                            | Barreto Junior JEF | 04.116                                               |
| Baldiasserotto B | 09.002, 09.010,<br>09.076, 09.102 | Barreto KP         | 08.005                                               |
|                  |                                   | Barreto LH         | 10.022                                               |
| Baldo C          | 05.020                            | Barros CM          | 09.095                                               |
| Ballico MM       | 04.006                            | Barros MA          | 02.006, 02.006                                       |
| Bandeira ES      | 09.129                            | Barros RBM         | 06.031, 11.011                                       |
| Bandeira ICJ     | 01.021, 09.042                    | Barros RM          | 09.062                                               |
| Bandeira-Melo C  | 01.020                            | Barroso WA         | 07.018                                               |
| Bandiera S       | 02.032                            | Bassani TB         | 02.041, 02.050                                       |
| Baptista TM      | 11.011                            | Bastos AC          | 09.080, 09.082                                       |
| Baracat MM       | 04.036                            | Bastos AM          | 09.144                                               |
| Barbalho JVM     | 04.096, 04.097                    | Bastos BM          | 09.022                                               |
| Barbisan F       | 10.002, 11.007                    | Bastos C           | 05.005                                               |
| Barbosa AL       | 07.006                            | Bastos CCC         | 09.067                                               |
| Barbosa ALR      | 04.110, 05.050                    | Bastos GNT         | 04.042, 05.039,<br>09.080, 09.082,<br>09.122, 09.129 |
| Barbosa CP       | 02.021, 03.019,<br>09.013         |                    |                                                      |

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|-------------------|-----------------|---------------------|-----------------|
| Bastos JM         | 09.022          | Benevides ROA       | 09.083          |
| Bastos JR         | 03.012          | Benvegnú DM         | 11.013          |
| Bastos JSF        | 09.111          | Bernadino AC        | 01.016          |
| Bastos LFS        | 05.014          | Bernardes PTT       | 04.123          |
| Bastos MVR        | 09.037          | Bernardez-Amorim MB | 04.013, 04.024  |
| Bastos RL         | 04.045          | Bernardi A          | 04.119          |
| Bastos-Pereira AL | 04.093          | Bernardo FD         | 11.004          |
| Batista AC        | 08.006, 09.067  | Berro LF            | 03.003, 03.013  |
| Batista GLP       | 04.015          | Bersani-Amado CA    | 04.041, 04.045, |
| Batista JA        | 05.050          |                     | 04.062, 04.073  |
| Batista JS        | 09.071          | Bertani R           | 09.006          |
| Batista LM        | 07.002, 07.007, | Bezerra DP          | 09.050          |
|                   | 07.009, 07.015, | Bezerra EM          | 01.018          |
|                   | 09.112          | Bezerra GF          | 09.042          |
| Batista LM        |                 | Bezerra MM          | 05.029, 05.030, |
| Batista MC        | 09.092, 09.093  |                     | 05.032, 05.052, |
| Batista ML        | 07.016          |                     | 09.022, 09.048, |
| Batista NV        | 04.064          |                     | 09.056, 09.070, |
| Batista P         | 04.086          |                     | 09.085, 09.103  |
| Batista TGFM      | 11.021          | Bezerra TO          | 04.033          |
| Batista TM        | 10.014, 10.015, | Bicca MA            | 02.001          |
|                   | 11.022          | Bindá AH            | 02.057, 06.060, |
| Batisti AP        | 09.081          |                     | 09.017, 09.142  |
| Battastini AMO    | 04.009, 04.012  | Bobinski F          | 04.044          |
| Bauermann LF      | 05.024, 11.003  | Bocalon AC          | 06.023          |
| Beautrait A       | 01.017          | Bocalon LG          | 09.003          |
| Beck VR           | 04.053          | Boff D              | 04.091          |
| Becker R          | 01.010          | Bogo MR             | 04.009, 09.033  |
| Beiriz RV         | 01.012, 01.016, | Boisson-Vidal C     | 04.030          |
|                   | 01.016, 06.035  | Boligan AA          | 09.028, 09.057  |
| Beltrame OC       | 10.004          | Bolzan LP           | 09.076          |
| Beltrão DM        | 10.014, 11.006, | Bomfim GHS          | 06.026          |
|                   | 11.022          | Bomfim LM           | 09.050          |
| Bem AXC           | 04.015          | Bona MD             | 06.018, 06.056  |
| Bem GF            | 09.101, 09.109  | Bonan CD            | 04.009          |
| Bendhack LM       | 01.025, 06.015, | Bonaventura D       | 06.007, 06.045  |
|                   | 06.019, 06.020, | Bonfim SR           | 04.096          |
|                   | 06.022, 06.023, | Borato DG           | 09.051          |
|                   | 06.042          | Borges ACR          | 07.018, 09.021, |
| Benevide NMB      | 09.070          |                     | 09.083, 09.084  |
| Benevides MLACS   | 09.081          | Borges IP           | 01.014          |
| Benevides NBB     | 09.022          | Borges LL           | 06.008          |
| Benevides NMB     | 05.029, 05.030, | Borges MH           | 09.016, 09.074  |
|                   | 05.032, 09.048, | Borges MOR          | 07.018, 09.021, |
|                   | 09.078, 09.085, |                     | 09.083, 09.084  |
|                   | 09.126          | Borges P            | 04.086          |

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|-----------------------|-----------------|------------------|-----------------|
| Borges RP             | 11.025          | Brito KS         | 09.062          |
| Borges VF             | 04.015, 04.070, | Brito LM         | 09.128          |
|                       | 04.122          | Brito ML         | 09.117          |
| Borges VM             | 11.016          | Brito MT         | 09.143, 10.014, |
| Boschen S             | 02.050          |                  | 10.028, 11.022  |
| Bosquesi CL           | 09.007          | Brito SMRC       | 05.031          |
| Bottamedi M           | 05.036          | Brito TS         | 06.048          |
| Botton SA             | 01.005          | Brito TV         | 04.071, 04.110, |
| Bouskela E            | 04.083          |                  | 05.050          |
| Bouvier M             | 01.017          | Brito VGB        | 04.075          |
| Bozza PT              | 01.020, 09.137  | Britto LRG       | 02.057          |
| Braga ACM             | 02.002          | Brusco I         | 05.005          |
| Braga AD              | 09.100          | Bucker NF        | 10.006          |
| Braga FC              | 06.003, 09.043  | Bueno AN         | 11.016          |
| Braga LLBCB           | 04.054          | Bueno e Silva MM | 10.020          |
| Braga VA              | 09.011          | Burban M         | 06.003          |
| Brain SD              | 04.056, 04.057  | Burbano RMR      | 10.022          |
| Branco NC             | 09.127          | Burger ME        | 02.003, 02.024, |
| Brandão M             | 06.057          |                  | 11.013          |
| Brant F               | 04.038          | Bürger ME        | 02.038, 02.045  |
| Braoios A             | 09.141          | Buri MV          | 09.131          |
| Brasil T              | 04.058          | Busanello A      | 02.015, 02.021, |
| Braúna IS             | 05.050          |                  | 03.019, 09.013, |
| Braz-Filho R          | 09.072          |                  | 09.028, 09.057  |
| Brazil LM             | 09.001          | Bustillo S       | 09.065          |
| Breda RV              | 02.030          | Buzzi FC         | 05.013          |
| Breithaupt-Faloppa AC | 04.013, 04.024, |                  |                 |
|                       | 04.025          |                  |                 |
| Bressan GN            | 03.019, 09.028  |                  |                 |
| Bringel PHSF          | 04.102, 09.125  |                  |                 |
| Brites V L C          | 09.074          |                  |                 |
| Brito AF              | 08.008, 09.035  |                  |                 |
| Brito CB              | 04.001, 04.060, |                  |                 |
|                       | 04.085          |                  |                 |
| Brito CXL             | 04.057          |                  |                 |
| Brito FCF             | 06.029, 06.044, |                  |                 |
|                       | 11.028          |                  |                 |
| Brito GAC             | 04.015, 04.039, |                  |                 |
|                       | 04.116, 05.029, |                  |                 |
|                       | 05.030, 05.032, |                  |                 |
|                       | 05.044, 05.052, |                  |                 |
|                       | 09.022, 09.056, |                  |                 |
|                       | 09.070          |                  |                 |
| Brito GB              | 06.029          |                  |                 |
| Brito HO              | 04.093          |                  |                 |
| Brito IRV             | 11.016          |                  |                 |

## C

|               |                 |
|---------------|-----------------|
| Cabral CHK    | 03.021          |
| Cabral PHB    | 09.017, 09.142  |
| Cabral-Melo A | 04.081          |
| Cadena SMSCC  | 10.004          |
| Cadoná F      | 10.002          |
| Caetano EWS   | 10.018          |
| Caffarena E   | 04.086          |
| Cajazeiras JB | 09.125          |
| Calcagno DQ   | 01.010          |
| Calcina TBB   | 04.040, 04.048, |
|               | 04.063          |
| Caldas GFR    | 09.068          |
| Caldas LM     | 11.016          |
| Calderon LA   | 09.111          |
| Calheiros AS  | 09.137          |
| Calil-Elias S | 09.061          |

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|------------------|------------------------------------------------------------------------------------|---------------------|-----------------------------------------------------------------|
| Calixto JB       | 02.001, 02.018,<br>09.052                                                          | Carraro-Lacroix LR  | 06.053                                                          |
| Calixto MC       | 04.029, 04.115                                                                     | Carregari VC        | 09.108                                                          |
| Calixto-Campos C | 05.018, 05.020,<br>05.023, 05.028,<br>05.034                                       | Cartágenes MSS      | 09.083, 09.084                                                  |
|                  |                                                                                    | Caruso-Neves C      | 04.017                                                          |
|                  |                                                                                    | Carvalho AAV        | 09.097                                                          |
|                  |                                                                                    | Carvalho AMR        | 04.068, 05.044,<br>09.037, 09.038                               |
| Calou IBF        | 03.022, 09.115                                                                     |                     |                                                                 |
| Câmara CA        | 09.134                                                                             | Carvalho AR         | 01.004                                                          |
| Câmara H         | 06.016, 06.058                                                                     | Carvalho CES        | 09.117, 09.124,<br>09.128                                       |
| Câmara NOS       | 04.006                                                                             |                     |                                                                 |
| Camargo EA       | 04.037, 04.049                                                                     | Carvalho DC         | 09.036                                                          |
| Campanini MZ     | 04.036                                                                             | Carvalho EF         | 09.018, 09.124,<br>09.127                                       |
| Campêlo JAC      | 06.037                                                                             |                     |                                                                 |
| Campesatto EA    | 04.061, 04.067,<br>05.015                                                          | Carvalho EM         | 10.021                                                          |
|                  |                                                                                    | Carvalho FAA        | 09.117, 09.128                                                  |
| Campos DCO       | 09.023                                                                             | Carvalho FL         | 03.011                                                          |
| Campos MHA       | 04.038                                                                             | Carvalho GD         | 09.121                                                          |
| Campos MM        | 01.006, 03.002,<br>04.009, 04.016,<br>05.002, 05.008,<br>09.020, 09.033,<br>10.005 | Carvalho JA         | 04.028                                                          |
|                  |                                                                                    | Carvalho KIM        | 08.009                                                          |
|                  |                                                                                    | Carvalho L          | 04.017, 04.018<br>09.027, 09.101,<br>09.109, 09.118             |
|                  |                                                                                    | Carvalho LCRM       |                                                                 |
| Campos RM        | 11.008                                                                             | Carvalho LH         | 09.111                                                          |
| Cancio KS        | 06.009                                                                             | Carvalho MDS        | 03.021                                                          |
| Candé A          | 04.076                                                                             | Carvalho MHC        | 04.006                                                          |
| Candea ALP       | 04.017, 04.018,<br>04.051                                                          | Carvalho MS         | 02.007                                                          |
|                  |                                                                                    | Carvalho NS         | 07.001, 07.006,<br>07.011                                       |
| Canevese FF      | 05.008                                                                             |                     |                                                                 |
| Canuto JA        | 09.042                                                                             | Carvalho RBF        | 09.116                                                          |
| Capibaribe VCC   | 02.054                                                                             | Carvalho TT         | 05.018, 05.023,<br>05.033, 05.034                               |
| Carbonel AAF     | 07.003                                                                             |                     |                                                                 |
| Cardia GFE       | 04.041                                                                             | Carvalho VF         | 04.005, 04.007,<br>04.077, 04.082                               |
| Cardoso AS       | 02.043                                                                             |                     |                                                                 |
| Cardoso EA       | 01.001                                                                             | Casagrande R        | 04.036, 05.018,<br>05.020, 05.023,<br>05.033, 05.034,<br>09.087 |
| Cardoso Jr CDA   | 11.012                                                                             |                     |                                                                 |
| Cardoso TC       | 01.007                                                                             |                     |                                                                 |
| Cardozo AM       | 11.014                                                                             |                     |                                                                 |
| Caria CRP        | 04.087, 04.094                                                                     | Casarotto PC        | 03.017                                                          |
| Carioletti GH    | 06.030                                                                             | Cascabulho C        | 04.035                                                          |
| Carlini CR       | 02.030, 04.031                                                                     | Cassali GD          | 10.019                                                          |
| Carlos CP        | 04.003                                                                             | Castanheira FVS     | 04.070, 04.122                                                  |
| Carmo AAF        | 04.022, 04.055                                                                     | Castanheira PNS     | 09.001, 09.001                                                  |
| Carmo EGB        | 09.007                                                                             | Castello Branco MVS | 09.112                                                          |
| Carmo LD         | 04.023, 09.132                                                                     | Castro HC           | 01.001                                                          |
| Carmo PL         | 09.095                                                                             | Castro LA           | 02.017, 02.036,<br>02.040, 02.054                               |
| Carneiro FS      | 06.025                                                                             |                     |                                                                 |

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|----------------------|------------------------------------------------------------------------------------|----------------------|-----------------------------------|
| Castro LD            | 09.080, 09.082,<br>09.129                                                          |                      | 09.048, 09.056,<br>09.085, 09.103 |
| Castro LSEPW         | 10.006                                                                             | Chaves MH            | 09.018, 09.090,                   |
| Castro M             | 04.054                                                                             |                      | 09.128                            |
| Castro OB            | 09.111                                                                             | Chaves RC            | 02.017                            |
| Castro PFS           | 06.008, 08.006                                                                     | Chaves-Neto AH       | 04.075                            |
| Castro QJT           | 06.017                                                                             | Chen CH              | 05.037                            |
| Castro RC            | 09.007                                                                             | Chen LS              | 11.008                            |
| Castro RR            | 04.102                                                                             | Chiaradia LD         | 10.005                            |
| Castro-Faria-Neto HC | 05.046, 09.137                                                                     | Chies AB             | 04.003                            |
| Catharino R          | 02.033                                                                             | Ciambarella BT       | 04.007, 04.082,                   |
| Cattani VB           | 09.028                                                                             |                      | 04.084, 04.119,                   |
| Cau SBA              | 06.025                                                                             |                      | 04.120                            |
| Caumo W              | 04.019, 05.003,<br>05.011, 05.035,<br>08.004                                       | Cignachi NP          | 04.016                            |
|                      |                                                                                    | Cinelli LP           | 09.130, 09.132                    |
| Caux TR              | 04.010, 04.022                                                                     | Cintra A             | 06.021                            |
| Cavada BS            | 09.125                                                                             | Cioato SG            | 04.019                            |
| Cavagni J            | 04.012                                                                             | Cirillo MC           | 09.044, 09.045                    |
| Cavalcante AACM      | 01.026, 11.020                                                                     | Cisalpino D          | 04.002                            |
| Cavalcante ALC       | 03.022                                                                             | Cisalpino PS         | 04.105                            |
| Cavalcante FA        | 07.017, 09.026,<br>09.030, 09.032,<br>09.086, 09.131,<br>09.134, 09.140,<br>09.146 | Citó AMGL            | 06.042, 09.117,<br>09.121         |
|                      |                                                                                    | Citó MCO             | 02.035, 02.042,<br>02.048, 02.059 |
|                      |                                                                                    | Clarimundo V         | 03.001                            |
| Cavalcanti BC        | 10.003                                                                             | Clemente-Napimoga JT | 05.029, 05.032                    |
| Cavalcanti RF        | 04.054                                                                             | Clementino-Neto J    | 06.035                            |
| Caxito ML            | 04.004                                                                             | Coelho AG            | 09.121                            |
| Cechinel Filho V     | 05.013                                                                             | Coelho EB            | 11.001                            |
| Celestino RCA        | 09.132                                                                             | Coelho IS            | 02.018                            |
| Ceraglioli H         | 02.033                                                                             | Coelho MGP           | 04.004, 04.104                    |
| Cerqueira GS         | 09.115                                                                             | Coelho ML            | 09.113                            |
| Cerqueira JBG        | 08.010, 11.029                                                                     | Coelho YP            | 06.018, 06.056,<br>06.060         |
| Cesário FRAS         | 02.056, 04.079,<br>09.119                                                          | Cogo JC              | 09.029, 09.096,<br>09.145         |
| Cesário TAM          | 07.003                                                                             | Coimbra CC           | 04.123                            |
| Cevada BA            | 09.137                                                                             | Collaço RCO          | 09.096, 09.145                    |
| Chan-Porter F        | 09.053                                                                             | Colle D              | 02.014                            |
| Chapman E            | 09.148                                                                             | Colombo BB           | 09.087                            |
| Chave HV             | 05.029                                                                             | Conceição EC         | 06.008                            |
| Chaves AS            | 11.010                                                                             | Confortin G          | 10.010                            |
| Chaves EMC           | 02.031                                                                             | Cons BL              | 09.041                            |
| Chaves Filho AJM     | 07.008                                                                             | Conserva LM          | 04.050                            |
| Chaves HV            | 05.030, 05.032,<br>05.052, 09.022,                                                 | Cordeiro MB          | 09.011                            |

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|-----------------|-----------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------------|
| Cordeiro RSB    | 04.021, 04.065,<br>04.077, 04.119                               | Costa MF         | 04.017, 04.035                                                                             |
| Cordeiro VSC    | 09.101, 09.109,<br>09.118                                       | Costa MFB        | 01.021, 09.008                                                                             |
| Coronel C       | 09.119                                                          | Costa MP         | 10.018                                                                                     |
| Corrado AP      | 02.011                                                          | Costa MS         | 04.018                                                                                     |
| Correa JD       | 01.022                                                          | Costa NF         | 05.046                                                                                     |
| Correa L        | 04.076                                                          | Costa PHS        | 06.018, 06.056,<br>06.060, 09.023,<br>09.072                                               |
| Correa LB       | 04.078                                                          | Costa PPC        | 09.094, 09.152                                                                             |
| Corrêa M        | 05.023, 05.028                                                  | Costa PRR        | 09.073, 10.009                                                                             |
| Correa MS       | 09.066                                                          | Costa R          | 09.052                                                                                     |
| Correa R        | 05.013                                                          | Costa RF         | 01.018                                                                                     |
| Correia ACC     | 09.026, 09.086,<br>09.131                                       | Costa RS         | 06.024                                                                                     |
| Correia-De-Sá P | 02.011                                                          | Costa SKP        | 04.049, 04.057                                                                             |
| Corso CR        | 05.006                                                          | Costa T          | 04.017                                                                                     |
| Cortês AL       | 06.013                                                          | Costa TEMM       | 04.018                                                                                     |
| Côrtes SF       | 06.003, 06.014,<br>09.043                                       | Costa TR         | 11.002, 11.005                                                                             |
| Cortez LUAS     | 06.012, 06.028                                                  | Costa VCO        | 09.030                                                                                     |
| Cosmo ML        | 09.046                                                          | Costa VV         | 04.002, 05.014                                                                             |
| Costa AEA       | 09.064                                                          | Costa-Lotufo LV  | 09.130, 09.132,<br>09.135, 09.148,<br>10.009, 10.013,<br>10.017, 10.027,<br>10.029, 10.029 |
| Costa AF        | 05.012                                                          |                  |                                                                                            |
| Costa AM        | 10.009, 10.029                                                  |                  |                                                                                            |
| Costa BRC       | 04.022, 04.055                                                  | Costa-Neto CM    | 01.017                                                                                     |
| Costa CA        | 09.027, 09.101,<br>09.109, 09.118                               | Costa-Silva JH   | 09.088, 09.133                                                                             |
| Costa CDF       | 01.012, 01.016                                                  | Cotias AC        | 04.021, 04.077,<br>04.120                                                                  |
| Costa CP        | 06.051                                                          | Cotica ESK       | 11.017                                                                                     |
| Costa DVS       | 04.095, 04.116                                                  | Couillin I       | 01.030                                                                                     |
| Costa EA        | 02.023, 05.004,<br>05.016, 05.026,<br>05.038, 09.097,<br>09.144 | Coutinho DS      | 04.043                                                                                     |
|                 |                                                                 | Coutinho H D M   | 09.012, 09.012                                                                             |
|                 |                                                                 | Coutinho HDM     | 09.119                                                                                     |
|                 |                                                                 | Coutinho-Silva R | 04.011                                                                                     |
| Costa EV        | 09.050                                                          | Couture R        | 01.006                                                                                     |
| Costa FL        | 05.044, 09.038                                                  | Craijonas R      | 06.052                                                                                     |
| Costa HHV       | 03.017                                                          | Crajoinas RO     | 06.053                                                                                     |
| Costa ICG       | 09.128                                                          | Cremonez CM      | 09.039                                                                                     |
| Costa JCS       | 04.021, 08.009                                                  | Crespo-Lopez ME  | 02.046, 09.114                                                                             |
| Costa JFT       | 09.135                                                          | Crestani S       | 07.010                                                                                     |
| Costa JGM       | 09.025, 09.119                                                  | Criddle DN       | 04.096, 04.097,<br>05.047                                                                  |
| Costa Júnior JS | 09.034                                                          |                  |                                                                                            |
| Costa KM        | 03.002, 05.002                                                  | Crippa JAS       | 03.007                                                                                     |
| Costa LLM       | 06.009                                                          | Cristino Filho G | 05.032, 09.048,<br>09.056, 09.070,<br>09.103                                               |
| Costa LM        | 09.113                                                          |                  |                                                                                            |
| Costa LS        | 11.002, 11.005                                                  |                  |                                                                                            |



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|-----------------|--------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------------------------------------|
| Cruz FF         | 04.009                                                                                                                   | da Costa GF        | 09.118                                               |
| Cruz IBM        | 10.002, 11.007                                                                                                           | da Costa JC        | 02.030                                               |
| Cruz JMT        | 09.041                                                                                                                   | da Cunha C         | 02.050                                               |
| Cruz JS         | 08.009                                                                                                                   | da Cunha LER       | 09.001                                               |
| Cruz LP         | 02.056, 09.119                                                                                                           | da Silva DHM       | 09.125                                               |
| Cruz RMD        | 10.028                                                                                                                   | da Silva GR        | 09.014                                               |
| Cruz W          | 04.014                                                                                                                   | da Silva JKR       | 09.122                                               |
| Cruz-Höfling MA | 02.033, 09.099                                                                                                           | da Silva KT        | 09.130                                               |
| Cuman RKN       | 04.041, 04.045,<br>04.062, 04.073                                                                                        | da Silva LM        | 06.043, 07.010,<br>09.051                            |
| Cunha AS        | 02.014                                                                                                                   | da Silva RCMVAF    | 07.010                                               |
| Cunha FB        | 09.119                                                                                                                   | da Silva-Santos JE | 06.005, 06.027,<br>06.032, 06.040,<br>06.043, 07.010 |
| Cunha FQ        | 01.024, 01.030,<br>04.015, 04.070,<br>04.107, 04.108,<br>04.109, 04.113,<br>04.122, 05.025,<br>05.027, 05.042,<br>05.043 | Dafre AL           | 02.044                                               |
| Cunha FVM       | 04.103                                                                                                                   | Dal Belo CA        | 02.011, 02.028,<br>02.030, 09.066                    |
| Cunha GH        | 06.002                                                                                                                   | Dale CS            | 04.072                                               |
| Cunha JA        | 09.076, 09.102                                                                                                           | Dalenogare JF      | 08.005                                               |
| Cunha MP        | 02.014                                                                                                                   | Dalla Pozza CC     | 05.005                                               |
| Cunha MS        | 09.092, 09.093                                                                                                           | Dalmaz C           | 03.001                                               |
| Cunha PJ        | 09.027                                                                                                                   | D'Almeida V        | 07.003                                               |
| Cunha TM        | 01.022, 01.024,<br>01.030, 04.036,<br>04.108, 04.122,<br>05.021, 05.025,<br>05.027, 05.042,<br>05.043, 05.053,<br>06.010 | Dalmora SL         | 11.012                                               |
| Cunha WR        | 09.003                                                                                                                   | Dal-Secco D        | 05.012                                               |
| Cunha-Filho G   | 01.019                                                                                                                   | Damasceno EC       | 06.062                                               |
| Cunha-Filho GA  | 09.073, 10.011                                                                                                           | Damasceno SRB      | 01.023, 04.097                                       |
| Cunha-Filho GSA | 01.013                                                                                                                   | Dani C             | 03.009                                               |
| Curi R          | 09.009                                                                                                                   | Dantas RC          | 09.078                                               |
| Cury Y          | 05.037                                                                                                                   | Danziato PM        | 09.078                                               |
| Custódio FR     | 03.020                                                                                                                   | Dariolli R         | 06.053                                               |
| Custodio KM     | 09.081                                                                                                                   | Daudt LD           | 04.012                                               |
| Cutignano A     | 10.013                                                                                                                   | David CC           | 09.134                                               |
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|                 |                                                                                                                          | de Almeida CGM     | 02.030                                               |
|                 |                                                                                                                          | de Andrade CR      | 09.098                                               |
|                 |                                                                                                                          | de Bem GF          | 09.027, 09.118                                       |
|                 |                                                                                                                          | de Freitas MAA     | 10.019                                               |
|                 |                                                                                                                          | de Lima AB         | 09.122                                               |
|                 |                                                                                                                          | de Lima TCM        | 09.097                                               |
|                 |                                                                                                                          | de Macedo IC       | 05.003                                               |
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| D'Almeida APL   | 04.119                                                                                                                   |                    |                                                      |
| da Costa BB     | 09.130                                                                                                                   |                    |                                                      |

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| de Oliveira CV      | 02.026, 02.027,<br>09.069         | do Carmo LD       | 09.130                            |
| de Oliveira DM      | 09.114                            | do Nascimento JLM | 05.039, 09.122                    |
| De Paula TP         | 04.105                            | do-Amaral CCF     | 04.075                            |
| De Paulo MEFV       | 09.047                            | Domingos RF       | 09.151                            |
| De Sá ISLB          | 04.116                            | Donate PB         | 04.070                            |
| De Siqueira RJB     | 06.041                            | Dorce VAC         | 09.036, 09.047                    |
| De Souza CM         | 10.019                            | Dornelas-Filho AF | 04.098                            |
| De Souza IA         | 04.047                            | Dornelles E       | 11.007                            |
| de Souza P          | 06.027, 06.043                    | Dorr F            | 04.014                            |
| de Souza TG         | 09.130                            | dos Anjos JV      | 02.007                            |
| de Souza TL         | 02.026, 02.027,<br>09.069         | dos Reis AS       | 04.057                            |
| Debiasi BW          | 10.008                            | dos Santos AFC    | 02.029                            |
| De-Freitas-Junior J | 04.031                            | dos Santos J I    | 09.074                            |
| Deitos A            | 05.011                            | dos Santos JS     | 09.049                            |
| Del Bel EA          | 03.007                            | Dotto MM          | 09.013, 09.057                    |
| Dela Cruz C         | 07.013                            | Dourado LPA       | 04.085, 04.112                    |
| Delbin MA           | 06.047                            | Duarte DA         | 01.017                            |
| Della Porta L       | 07.004                            | Duarte ID         | 05.009                            |
| Dellamora-Ortiz GM  | 09.063                            | Duarte LP         | 05.009                            |
| Delmondes GA        | 02.056, 09.119                    | Duarte MER        | 09.077                            |
| Denise Perez        | 04.020                            | Duarte T          | 01.028                            |
| DeSantana JM        | 04.037                            | Duavy SMP         | 09.025                            |
| DeSouza IA          | 04.081                            | Durli-Júnior I    | 11.014                            |
| Detanico BC         | 04.012                            | Dutra LM          | 09.050                            |
| Deupi X             | 01.017                            | Dutra PGP         | 09.022                            |
| Di Siena G          | 05.019                            | Dutra RC          | 02.018                            |
| Di Stasi LC         | 09.114                            | Dutra RP          | 07.018, 09.092,<br>09.093         |
| Dias ACF            | 04.002, 04.112,<br>05.014         | <b>E</b>          |                                   |
| Dias AT             | 06.021                            | Echevarria A      | 10.004                            |
| Dias D              | 04.042                            | Einicker-Lamas M  | 06.024                            |
| Dias DCR            | 09.122                            | Eleuterio EO      | 09.017                            |
| Dias DF             | 04.007, 04.120                    | Elisabetsky E     | 03.001                            |
| Dias GG             | 10.018                            | El-kik CZ         | 09.061                            |
| Dias GJJ            | 04.110                            | Emmanouilidis J   | 01.005                            |
| Dias JLG            | 06.053                            | Erig TC           | 09.020, 10.005                    |
| Dias JM             | 05.050                            | ESA Pacini        | 01.027                            |
| Dias L              | 09.107, 09.136                    | Esperandim VR     | 09.003                            |
| Dias ML             | 04.068, 05.044,<br>09.037, 09.038 | Estado V          | 04.017, 04.018                    |
| Dias VT             | 02.024, 02.045                    | Estevam CS        | 09.071                            |
| Diniz-Filho J       | 01.018                            | Estrela RCE       | 11.019                            |
| Dittrich RL         | 10.004                            | Etges A           | 04.016                            |
| Dittz D             | 09.106                            | Evangelista AF    | 05.048, 05.051                    |
|                     |                                   | Evangelista JSAM  | 09.094, 09.139,<br>09.152, 09.155 |

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| Fachinetto R     | 02.015, 02.021,<br>02.022, 02.025,<br>03.019, 09.013,<br>09.028, 09.057 | Ferrari MC         | 02.025                                                          |
| Facine LM        | 06.007                                                                  | Ferraris FK        | 11.010, 11.021                                                  |
| Fagundes CT      | 04.002                                                                  | Ferraz CR          | 05.020                                                          |
| Falcai A         | 04.056                                                                  | Ferreira AKB       | 06.035                                                          |
| Fantozzi ET      | 04.024                                                                  | Ferreira AVM       | 04.064                                                          |
| Farah V          | 06.057                                                                  | Ferreira DS        | 09.003                                                          |
| Faria CN         | 09.130                                                                  | Ferreira Duarte AP | 04.047                                                          |
| Farias IAP       | 10.014, 10.028,<br>11.006                                               | Ferreira DW        | 05.025, 05.042                                                  |
| Farias MS        | 10.006                                                                  | Ferreira EDF       | 02.020, 02.034                                                  |
| Farias VX        | 02.057, 06.006                                                          | Ferreira EG        | 09.135, 09.154                                                  |
| Farina M         | 02.014, 04.092                                                          | Ferreira FB        | 09.074                                                          |
| Farsky S         | 04.014                                                                  | Ferreira FS        | 09.021, 09.092,<br>09.093                                       |
| Fattori V        | 05.034, 09.087                                                          | Ferreira J         | 05.005, 05.019,<br>05.024                                       |
| Fausto V         | 09.076                                                                  | Ferreira JAN       | 09.115                                                          |
| Fechine FV       | 06.002                                                                  | Ferreira JC        | 05.037                                                          |
| Feitosa ACS      | 10.018                                                                  | Ferreira LFP       | 11.002, 11.005                                                  |
| Feitosa ML       | 02.055, 06.037,<br>07.008                                               | Ferreira LG        | 09.077                                                          |
| Feitoza PR       | 06.019                                                                  | Ferreira M         | 02.033                                                          |
| Felipe CFB       | 02.056, 09.119                                                          | Ferreira MBC       | 04.012                                                          |
| Felipe KB        | 10.006                                                                  | Ferreira MZJ       | 09.139                                                          |
| Felipe-Batista K | 06.062                                                                  | Ferreira NH        | 10.007                                                          |
| Félix GS         | 08.008, 09.035                                                          | Ferreira NS        | 06.025                                                          |
| Fenical W        | 10.027                                                                  | Ferreira PAB       | 09.138                                                          |
| Fernandes C      | 04.098                                                                  | Ferreira PB        | 08.008, 09.030,<br>09.032, 09.035,<br>09.134, 09.140,<br>09.146 |
| Fernandes CEL    | 02.042                                                                  | Ferreira PMP       | 10.008                                                          |
| Fernandes DC     | 04.004                                                                  | Ferreira RCM       | 05.009, 05.017                                                  |
| Fernandes ES     |                                                                         | Ferreira SB        | 09.079                                                          |
| Fernandes ES     | 04.056, 04.057,<br>09.049                                               | Ferreira SG        | 04.025                                                          |
| Fernandes HB     | 05.050                                                                  | Ferreira SRD       | 09.026, 09.086                                                  |
| Fernandes HMB    | 09.024, 10.015                                                          | Ferreira TPT       | 04.059, 04.065,<br>04.082, 04.084                               |
| Fernandes L      | 04.008                                                                  | Ferreira VS        | 04.036                                                          |
| Fernandes LC     | 01.021                                                                  | Ferreira ZS        | 04.011                                                          |
| Fernandes LMP    | 02.006, 02.046                                                          | Ferreira-Duarte AP | 04.081                                                          |
| Fernandes MEF    | 09.056, 09.085                                                          | Ferro JNS          | 04.050                                                          |
| Fernandes ML     | 02.035, 02.042,<br>02.048, 02.059                                       | Ferro MM           | 02.029                                                          |
| Fernandes MP     | 09.088                                                                  | Ferro TAF          | 04.056, 09.049                                                  |
| Fernandes PCL    | 06.055                                                                  | Fialho SL          | 10.019                                                          |
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| Figueiredo P de MS | 09.049          | Frade TIC     | 02.016          |
| Figueiredo SS      | 07.004          | Fraga CAM     | 01.002, 01.011, |
| Figueiredo TSI     | 04.066          |               | 05.053          |
| Filgueira FP       | 06.034, 09.144  | Fraga D       | 04.093          |
| Filho AJMC         | 02.055          | França FV     | 05.047          |
| Filho GC           | 05.030, 05.052, | França PL     | 01.025          |
|                    | 09.022          | França RFO    | 04.108          |
| Filho JMB          | 02.031          | Franciscato C | 11.004          |
| Filho JMSR         | 04.080, 11.015  | Francischi JN | 02.016          |
| Filho PFA          | 10.015          | Franco ATB    | 09.123          |
| Filho RB           | 10.023          | Franco AX     | 01.023, 04.095, |
| Filho SMP          | 09.022          |               | 04.096          |
| Filippi-Chiela EC  | 10.020          | Frare EO      | 09.047          |
| Finamor IA         | 02.004          | Frederico MJ  | 05.012          |
| Fiorino P          | 06.057          | Freire BTS    | 02.009          |
| Fiorio BC          | 04.096, 04.097  | Freire IS     | 09.064          |
| Fiuza TL           | 04.053          | Freire LM     | 11.024, 11.027  |
| Fleury MK          | 11.019          | Freire MSS    | 06.006, 06.011, |
| Florenço FC        | 07.008          |               | 06.046          |
| Florentino IF      | 05.004, 05.016, | Freire SMF    | 07.018, 09.084  |
|                    | 05.026, 09.097  | Freire VN     | 01.018, 10.018  |
| Floriano RS        | 09.108          | Freitag AF    | 04.041          |
| Fock R             | 04.014          | Freitas A     | 04.070          |
| Fonseca DV         | 03.011, 05.010  | Freitas A F R | 09.012          |
| Fonseca MD         | 05.025          | Freitas AR    | 05.029, 09.085  |
| Fonseca MDM        | 05.021, 05.042, | Freitas CM    | 02.015, 02.021, |
|                    | 05.043          |               | 03.019          |
| Fonseca MJV        | 04.036          | Freitas FFBP  | 05.031, 05.049  |
| Fonseca SGC        | 04.023          | Freitas FP    | 06.021          |
| Fonseca TF         | 09.061          | Freitas GW    | 11.012          |
| Fontana A          | 10.013          | Freitas HC    | 05.052          |
| Fonteles MC        | 02.057, 06.006, | Freitas HPS   | 09.154          |
|                    | 06.011, 06.028, | Freitas KM    | 04.101, 09.100, |
|                    | 06.046, 06.050, |               | 09.105          |
|                    | 06.053, 06.057, | Freitas LA    | 09.036          |
|                    | 06.059, 09.017, | Freitas LBN   | 04.080, 09.150, |
|                    | 09.142          |               | 11.015          |
| Fonteles MMF       | 02.055, 04.068, | Freitas MCC   | 05.039          |
|                    | 07.008          | Freitas RB    | 05.024, 09.150, |
|                    | 05.050          |               | 11.003          |
| Fontenele AM       | 09.074          | Freitas RDS   | 05.002          |
| Fontes MRM         | 02.006, 02.046  | Freitas RM    | 01.026, 02.058, |
| Fontes-Júnior EA   | 07.002, 07.007, |               | 04.071, 05.050, |
| Formiga RO         | 09.112          |               | 09.034, 09.089, |
| Forte TCM          | 04.063          |               | 09.091, 09.113, |
| Frade JO           | 04.034          |               |                 |

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|                  | 09.116, 11.020,<br>11.026         | Garcia CC<br>Garcia JB | 04.055<br>03.010                                     |
| Freitas RS       | 09.056, 09.070                    | García-Sáinz JA        | 01.003                                               |
| Freitas TC       | 02.030                            | Garlet GP              | 01.022                                               |
| Freitas WR       | 10.023, 10.026                    | Garlet QI              | 09.002, 09.059,<br>09.102                            |
| Froeder ALF      | 11.003                            |                        |                                                      |
| Frony AC         | 04.030                            | Gasparotto FM          | 09.014, 09.015                                       |
| Frota Bezerra FA | 11.024, 11.027                    | Gasparotto Junior A    | 09.014, 09.015,<br>09.019, 09.046                    |
| Froussard J      | 06.021                            |                        |                                                      |
| Frusciante M     | 03.009                            | Gatti FM               | 10.006                                               |
| Frussa-Filho R   | 03.013                            | Gava AL                | 06.021                                               |
| Frussa-Fillho R  | 03.003                            | Gavioli EC             | 02.007, 02.009,<br>02.012, 02.013,<br>03.010, 03.014 |
| Frutuoso VS      | 05.046, 09.137                    |                        |                                                      |
| Fuly AL          | 09.077, 09.079                    |                        |                                                      |
| Fumian MM        | 06.029, 06.044,<br>11.028         | Gazola AC              | 09.097                                               |
| Funchal CS       | 03.009                            | Georgetti SR           | 04.036                                               |
| Funck VR         | 02.026, 02.027                    | Geppetti P             | 05.019                                               |
| Funghetto M P    | 02.043                            | Ghedini PC             | 05.026, 06.034,<br>09.144                            |
| Furian AF        | 02.002, 02.026,<br>02.027, 09.069 | Ghilosso-Bortolini R   | 04.120                                               |
|                  |                                   | Giacomelli C           | 04.077                                               |
| Furtado FF       | 06.039                            | Gil APM                | 04.062, 04.073                                       |
| Furtado RA       | 10.007                            | Gil ES                 | 06.008                                               |
| Fusco CBP        | 09.047                            | Gimenes S N C          | 09.074                                               |
| Fusi C           | 05.019                            | Gimenes SNC            | 01.014                                               |
|                  |                                   | Giorgi R               | 10.012                                               |
|                  |                                   | Girao DKFB             | 01.023                                               |
|                  |                                   | Girão DKFB             | 04.027, 04.096,<br>04.097, 05.047                    |
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|                  |                                   | Girardi A              | 06.052                                               |
|                  |                                   | Girardi ACC            | 06.053                                               |
|                  |                                   | Girardi BA             | 02.005, 02.008,<br>03.004, 03.005                    |
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|                  |                                   | Girol AP               | 04.003                                               |
|                  |                                   | Glanzner WG            | 08.005                                               |
|                  |                                   | Gobira PH              | 03.015, 03.018                                       |
|                  |                                   | Godinho AN             | 06.050, 06.053,<br>06.059                            |
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|                  |                                   | Godinho J              | 02.020, 02.034                                       |
|                  |                                   | Godinho R O            | 01.028                                               |
|                  |                                   | Godinho RO             | 01.027, 06.016,<br>06.058                            |
|                  |                                   |                        |                                                      |
|                  |                                   | Gois RWS               | 09.040                                               |
|                  |                                   | Gomes AF               | 09.147                                               |
|                  |                                   | Gomes AS               | 04.116                                               |
|                  |                                   | Gomes BA               | 10.013                                               |

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| Gaban GA       | 09.061                            |  |  |
| Gaban L        | 09.138, 09.141                    |  |  |
| Gabbi P        | 02.043                            |  |  |
| Gadelha CAA    | 09.048, 09.056,<br>09.070, 09.103 |  |  |
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| Gadelha EC     | 11.024, 11.027                    |  |  |
| Gadelha TS     | 09.048, 09.056,<br>09.070, 09.103 |  |  |
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| Gagliano TJD   | 11.008                            |  |  |
| Gaio EJ        | 04.012                            |  |  |
| Gais MA        | 02.005, 02.008                    |  |  |
| Galdino PM     | 02.023, 09.097                    |  |  |
| Galuppo LF     | 10.004                            |  |  |
| Galvão I       | 04.022, 05.014                    |  |  |
| Galvão JLFM    | 09.134                            |  |  |
| Gambero A      | 04.087, 04.094                    |  |  |
| Garantizado CR | 03.022                            |  |  |
| Garbeloti EJR  | 06.001                            |  |  |

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| Gomes BS          | 04.103, 05.031  | Guimarães ARBV      | 09.143, 10.015  |
| Gomes EC          | 04.123          | Guimarães FS        | 03.006, 03.007, |
| Gomes FV          | 02.053, 03.007  |                     | 03.008          |
| Gomes IBS         | 06.021          | Guimarães FV        | 04.059          |
| Gomes Junior AL   | 01.026, 11.020  | Guimarães HN        | 06.017, 06.062, |
| Gomes LC          | 04.077          |                     | 11.025          |
| Gomes MCV         | 09.119          | Guimarães LA        | 09.154, 10.027  |
| Gomes MF          | 09.080, 09.082, | Guimarães MV        | 04.040, 04.048, |
|                   | 09.122, 09.129  |                     | 04.058, 04.063, |
| Gomes MSR         | 09.016          |                     | 04.092          |
| Gomes SLS         | 10.009          | Guimarães RAM       | 03.010          |
| Gomez JAG         | 01.001          | Guterres SS         | 04.119          |
| Gomez MV          | 09.020, 09.033  | Gutierrez SJC       | 09.037, 09.038, |
| Gomez R           | 02.032, 03.001  |                     | 09.089          |
| Gonçalves JCS     | 11.019          | <b>H</b>            |                 |
| Gonçalves OH      | 04.062          | Hallak JEC          | 03.007          |
| Gonçalves RPM     | 06.040          | Hamann F            | 04.053          |
| Gondim DV         | 05.052          | Haupental F         | 02.043          |
| Gonsalez S R      | 06.024          | Havt A              | 06.056          |
| Gonsalez SR       | 06.013          | Heberle MA          | 02.030          |
| Gonzaga JCO       | 09.143, 10.028  | Heinzmann B         | 09.076, 09.102  |
| Gonzaga JLD       | 06.050          | Heinzmann BM        | 09.002, 09.059  |
| Gonzaga NA        | 06.036          | Helal-Neto E        | 04.031          |
| Gonzaga-Silva LF  | 08.010, 11.029  | Henriques MG        | 04.017, 04.018, |
| Gonzales RH       | 04.015          |                     | 04.035, 04.076, |
| González TL       | 09.024          |                     | 04.078, 04.086  |
| Gorjão R          | 09.009          | Henriques MGMO      | 04.051          |
| Górniak SL        | 09.058          | Herculano EA        | 01.012, 01.016  |
| Gotardo EMF       | 04.094          | Hermans E           | 01.002          |
| Goulart G         | 04.026, 06.047  | Hertz E             | 10.002          |
| Grabe-Guimaraes A | 08.001, 08.002  | Hessel AT           | 02.010          |
| Grabe-Guimarães A | 06.017, 06.062, | Hickmann J          | 04.077          |
|                   | 11.023, 11.025  | Hilger D            | 03.009          |
| Grando M D        | 06.022          | Hipolito UV         | 06.004, 06.038  |
| Grando MD         | 06.015, 06.023  | Hohmann MSN         | 05.023, 05.033, |
| Graton ME         | 06.049, 06.061  |                     | 05.034          |
| Grauncke ACB      | 02.026, 02.027, | Hollais AW          | 03.003, 03.013  |
|                   | 09.069          | Homs-Brandeburgo MI | 01.014, 09.016  |
| Gressler LT       | 09.010, 09.059  | Hott SC             | 02.053          |
| Grigoletto J      | 02.026, 02.027, | Hughes CC           | 10.027          |
|                   | 09.069          | Hütten MO           | 10.001          |
| Grinivcius VMAS   | 10.006          | Hyslop S            | 04.074, 06.055, |
| Grisotto MAG      | 04.056, 04.057  |                     | 09.006, 09.107, |
| Guarido KL        | 06.005, 06.043  |                     | 09.108, 09.136, |
| Guerra ASHS       | 04.028, 09.151  |                     | 09.145, 09.149  |
| Gux CG            | 11.003          |                     |                 |

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| Iacomini M | 09.051         |
| Ignácio L  | 11.021         |
| Ilas J     | 09.053         |
| Inoue BR   | 09.107, 09.136 |
| Isabel TF  | 01.014         |
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| Jacomassi E   | 09.015                                       |
| Januário AH   | 09.003                                       |
| Jesse AC      | 02.010                                       |
| Jesus PF      | 03.003                                       |
| Jimenez PC    | 09.135, 09.148,<br>09.154, 10.013,<br>10.027 |
| Joca HC       | 08.009                                       |
| Jorge ARC     | 09.094, 09.153                               |
| Jorge RJB     | 09.023, 09.072,<br>09.094, 09.153,<br>09.155 |
| Jung I        | 11.007                                       |
| Júnior AGT    | 11.002, 11.005                               |
| Júnior ED     | 09.133                                       |
| Junior EPCS   | 09.117                                       |
| Júnior GB     | 09.059                                       |
| Júnior JERH   | 09.078                                       |
| Júnior JSC    | 05.050                                       |
| Junqueira SC  | 02.018                                       |
| Jurkiewicz A  | 06.016, 06.026,<br>06.058                    |
| Jurkiewicz NH | 06.026                                       |
| Justino PFC   | 04.027, 04.096,<br>04.097                    |
| Justo MG      | 04.004                                       |

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| Kanashiro MM | 10.023, 10.026 |
| Kanashiro S  | 04.122         |
| Kanis LA     | 09.081         |
| Kato EE      | 09.045         |
| Kaya H S     | 07.013         |
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| Kerntopf MR  | 02.056, 09.119 |

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| Keyson D       | 10.014, 10.028,<br>11.006 |
| Kikelj D       | 09.053                    |
| Kimura LF      | 05.007                    |
| Kipper FC      | 10.010                    |
| Kirby R        | 09.053                    |
| Klein A        | 04.088, 04.101,<br>05.009 |
| Kneib L        | 03.009                    |
| Krum BN        | 02.015, 03.019            |
| Kudo GK        | 04.025                    |
| Kuhn FT        | 02.003, 02.038            |
| Kummerle AE    | 06.029                    |
| Kuniyoshi AK   | 09.036                    |
| Kuo J          | 03.009, 08.004            |
| Kurita BM      | 04.048                    |
| Kwiecinski MR  | 10.006                    |
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| La Rocca V         | 03.011, 05.010                    |
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| Lacerda Neto LJ    | 04.079                            |
| Lacerda RB         | 05.053                            |
| Lafayette SSL      | 09.075                            |
| Lage FDO           | 09.105                            |
| Lagente V          | 04.065                            |
| Lagranha C         | 09.075                            |
| Lahlou S           | 06.041                            |
| Lameira OA         | 09.114                            |
| Lana JP            | 04.064                            |
| Lanchote VL        | 11.001                            |
| Landgraf MA        | 04.006, 04.008                    |
| Landgraf RG        | 04.006, 04.008                    |
| Landim de Barros T | 04.075                            |
| Landucci ECT       | 04.118                            |
| Lara LS            | 06.013, 06.024                    |
| Laranjeira EPP     | 09.125                            |
| Larrick JW         | 02.026                            |
| Lassance Cunha E   | 04.058                            |
| Laste G            | 05.003, 05.011,<br>05.035         |
| Latuf P            | 04.118                            |

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| Latyki C        | 02.029                                                          | Lima A    | 09.115                            |
| Leal AC         | 06.024                                                          | Lima AB   | 04.042, 05.039                    |
| Leal CQ         | 02.015, 03.019,<br>09.028                                       | Lima AEL  | 02.036, 02.040,<br>02.054         |
| Leal LKAM       | 04.080, 04.090,<br>04.100, 04.114,<br>04.117, 09.150,<br>11.015 | Lima C    | 02.002                            |
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| Leal NRF        | 04.104                                                          | Lima CSP  | 04.118                            |
| Leal PC         | 02.001                                                          | Lima DA   | 09.046                            |
| Leal RB         | 02.052                                                          | Lima DB   | 01.021, 09.008,                   |
| Leal RMLV       | 04.099                                                          |           | 09.042, 09.155                    |
| Leal WG         | 02.046                                                          | Lima DEV  | 09.152                            |
| Leal-Cardoso JH | 05.044                                                          | Lima DJB  | 10.008                            |
| Lehmen T        | 09.028                                                          | Lima E O  | 09.012                            |
| Leimann FV      | 04.062                                                          | Lima EBC  | 09.150                            |
| Leite ALAS      | 11.024, 11.027                                                  | Lima EM   | 09.067                            |
| Leite CA        | 04.107                                                          | Lima FAVL | 03.022                            |
| Leite CE        | 03.002, 04.009                                                  | Lima FCA  | 09.089                            |
| Leite GO        | 01.008                                                          | Lima FJB  | 06.048                            |
| Leite JRA       | 07.001                                                          | Lima FRF  | 01.023                            |
| Leite JRSA      | 07.011                                                          | Lima G S  | 09.004                            |
| Leite LN        | 06.004, 06.038                                                  | Lima GLN  | 04.010                            |
| Leite MCG       | 04.093                                                          | Lima GRM  | 07.009, 07.015,                   |
| Leite MLM       | 04.065                                                          |           | 09.112                            |
| Leite R         | 06.017, 06.062,<br>08.001, 08.002                               | Lima GS   | 09.090                            |
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| Leite TRS       | 06.044                                                          | Lima KA   | 02.055                            |
| Leite WS        | 11.024, 11.027                                                  | Lima KM   | 04.010, 04.022                    |
| Leito CAVG      | 04.113                                                          | Lima KSB  | 10.017                            |
| Leiva LC        | 09.065                                                          | Lima KWA  | 04.108                            |
| Lemos ICS       | 02.056                                                          | Lima LA   | 02.012                            |
| Lemos JC        | 05.030, 09.085                                                  | Lima LAR  | 09.115                            |
| Lemos TLG       | 01.010                                                          | Lima LM   | 04.082, 08.003                    |
| Lemos VS        | 06.014, 09.043                                                  | Lima MA   | 09.012                            |
| Lenfers B       | 09.081                                                          | Lima MAP  | 11.002                            |
| Lenz G          | 01.031, 10.001,<br>10.010, 10.020                               | Lima MAS  | 01.023, 04.027,<br>04.080, 11.015 |
| Lenz QF         | 02.010                                                          | Lima MJA  | 05.022                            |
| Lessa LMA       | 02.057, 06.050,<br>06.053, 06.059                               | Lima MMS  | 02.050                            |
|                 |                                                                 | Lima MS   | 05.048                            |
| Libardoni M     | 09.028                                                          | Lima NFM  | 09.021                            |
| Liberato FR     | 03.020                                                          | Lima PMA  | 04.123                            |
| Libório AB      | 09.008                                                          | Lima R L  | 04.085                            |
| Lieberknecht V  | 02.018                                                          | Lima RCO  | 02.019                            |
| Liew FY         | 04.108                                                          | Lima RF   | 04.027, 04.096                    |



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| Lima RL             | 04.001, 04.060                               | Lopes LGF        | 04.069                                       |
| Lima RR             | 01.016, 01.016,<br>02.006                    | Lopes MTP        | 04.101, 09.055,<br>09.100, 09.105,<br>09.106 |
| Lima SG             | 09.110                                       |                  |                                              |
| Lima TCM            | 02.039                                       | Lopes MW         | 02.052                                       |
| Lima TS             | 09.044                                       | Lopes Pires ME   | 04.026, 06.047                               |
| Lima V              | 04.040, 04.048,<br>04.058, 04.063,<br>04.092 | Lopes PL         | 09.023                                       |
|                     | 06.053                                       | Lopes SC         | 02.052                                       |
| Lima VS             |                                              | Lopes-Pires ME   | 04.032, 04.034,<br>04.118                    |
| Lima-Júnior RCP     | 04.015, 04.039,<br>04.098, 04.099,<br>09.120 | López V de la P  | 09.024                                       |
|                     |                                              | Lorensi GH       | 09.066                                       |
| Linard-Medeiros CFB | 09.075                                       | Lotufo LVC       | 09.154                                       |
| Linartevichi VF     | 02.039                                       | Lourenço ELB     | 09.014, 09.015,<br>09.019, 09.046            |
| Linder AE           | 06.030, 06.032,<br>06.033, 08.007            | Louzada-Junior P | 04.108                                       |
| Linhares AL         | 11.024, 11.027                               | Lucena EV        | 02.047                                       |
| Linhares EHPCM      | 11.002, 11.005                               | Lucetti LT       | 07.001, 07.012                               |
| Lino RC             | 05.038                                       | Lucho AP         | 02.028                                       |
| Lione VOF           | 01.001                                       | Lúcio ASSC       | 07.007                                       |
| Lira BF             | 10.015, 11.022                               | Luedy TA         | 11.002, 11.005                               |
| Lira KL             | 09.090                                       | Lugokenski TH    | 01.008                                       |
| Lívero F            | 10.004                                       | Lumbard B        | 08.007                                       |
| Llesuy SF           | 02.004                                       | Luna-Gomes T     | 01.020                                       |
| Lobo BW             | 05.040                                       | Lungato L        | 07.003                                       |
| Lobo BWL            | 09.063                                       | Luz DA           | 02.006                                       |
| Lobo KL             | 06.033                                       | <b>M</b>         |                                              |
| Loch-Neckel G       | 02.001                                       | Maboni LO        | 04.009                                       |
| Loiola AN           | 04.096, 04.097                               | Macambira KDS    | 09.155                                       |
| Lomba LA            | 04.093                                       | Macêdo AJR       | 06.037                                       |
| Londero EP          | 02.004, 09.010                               | Macedo DS        | 02.055                                       |
| Longhi SJ           | 09.002                                       | Macedo EMA       | 05.045                                       |
| Longhi-Balbinot DT  | 05.028                                       | Macedo IC        | 05.035, 08.004                               |
| Lopes AA            | 04.100, 04.114                               | Macedo-Júnior SJ | 11.014                                       |
| Lopes AHP           | 01.024, 01.030                               | Machado A K      | 10.002                                       |
| Lopes CDH           | 04.099                                       | Machado AK       | 11.007                                       |
| Lopes D S           | 09.074                                       | Machado ALC      | 04.046, 04.052                               |
| Lopes DS            | 09.016                                       | Machado CB       | 05.011                                       |
| Lopes EM            | 05.031, 05.049                               | Machado DFM      | 07.016                                       |
| Lopes IM            | 08.002                                       | Machado FDF      | 07.009, 07.015,<br>09.004                    |
| Lopes IS            | 02.017, 02.036,<br>02.042, 02.048,<br>02.054 | Machado FS       | 01.022, 03.009,<br>04.038, 04.105            |
| Lopes k L           | 09.004                                       | Machado GDB      | 05.008                                       |
| Lopes KS            | 02.006, 02.055                               |                  |                                              |

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| Machado KC                 | 09.091, 09.091,<br>10.008, 10.008 | Marçal MG            | 09.003                                                |
| Machado MM                 | 09.001                            | Marcondes S          | 04.026, 04.032,<br>04.034, 04.118,                    |
| Machado NT                 | 06.039                            |                      | 06.047                                                |
| Machado RR                 | 04.106                            | Maria AG             | 01.017                                                |
| Machado VS                 | 01.005                            | Maria-Engler SS      | 01.031                                                |
| Maciel GF                  | 05.052                            | Maria-Ferreira D     | 07.010, 09.051                                        |
| Maciel L                   | 01.025                            | Marinho AD           | 09.023, 09.072,                                       |
| Maciel LM                  | 09.048, 09.070,<br>09.103         |                      | 09.094, 09.153,<br>09.155                             |
| Mack JM                    | 02.018, 02.044                    | Marinho ALZ          | 03.006, 03.008                                        |
| Madeira JC                 | 01.015                            | Marinho CRF          | 04.057                                                |
| Madeira MFM                | 01.022                            | Marinho EAV          | 03.003, 03.013                                        |
| Madge D                    | 09.053                            | Marinho Filho JDB    | 09.060                                                |
| Magalhães GM               | 10.007                            | Marinho LB           | 08.010, 11.029                                        |
| Magalhães HIF              | 04.100                            | Marostica E          | 11.028                                                |
| Magalhães NSS              | 04.033                            | Marques AC           | 07.014                                                |
| Magalhães PJC              | 06.041, 06.048                    | Marques EB           | 06.031, 06.054                                        |
| Maia CSF                   | 02.006, 02.046                    | Marques KF           | 06.009                                                |
| Maia CY                    | 09.126                            | Marques LARV         | 06.002                                                |
| Maia GMP                   | 09.153                            | Marques PE           | 04.123                                                |
| Maia JGS                   | 09.122                            | Marques PR           | 04.019, 08.004                                        |
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| Maia MLCL                  | 02.031                            | Marques-Domingos GFO | 09.009                                                |
| Maia RC                    | 06.044, 11.028                    | Marreto RN           | 09.067                                                |
| Maia RR                    | 08.010, 11.029                    | Marschalk C          | 11.017                                                |
| Malnic G                   | 06.053                            | Martin TM            | 09.009                                                |
| Malpezzi-Marinho ELA       | 03.003, 03.013                    | Martinez RM          | 04.036                                                |
| Malveira CB                | 04.027                            | Martino TM           | 04.004                                                |
| Malveira LRC               | 09.120                            | Martins AB           | 09.078                                                |
| Manassés Claudino Fonteles |                                   | Martins ABO          | 01.021, 02.055,                                       |
| Manchini M                 | 06.052                            |                      | 09.008, 09.042,                                       |
| Manchope MF                | 05.018, 05.020,<br>05.034         | Martins AN           | 09.104, 09.155                                        |
| Mangueira VM               | 10.014, 10.015,<br>11.022         | Martins AOBPB        | 09.047                                                |
| Manjavachi MN              | 09.052                            | Martins CS           | 09.088                                                |
| Mannarino LA               | 11.028                            | Martins DF           | 04.095, 04.116                                        |
| Mantovani A                | 02.049                            | Martins FS           | 05.006, 09.081                                        |
| Manzato CP                 | 06.025                            | Martins GG           | 04.036                                                |
| Marafiga JR                | 02.010                            | Martins ICMT         | 10.004                                                |
| Marangoni S                | 09.065, 09.099,<br>09.108         | Martins IRR          | 06.011, 06.059                                        |
| Maranhão HML               | 09.088                            | Martins JLR          | 08.003                                                |
| Maranhão SS                | 10.003                            | Martins LB           | 09.097                                                |
| Marc A                     | 10.010                            | Martins MA           | 11.018                                                |
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|                    | 04.077, 04.082, | Mello PH         | 04.107          |
|                    | 04.084, 04.119, | Melo AT          | 04.039, 09.120  |
|                    | 04.120, 08.009  | Melo CTV         | 03.020, 05.022  |
| Martins MCC        | 09.062          | Melo DNS         | 07.018          |
| Martins MM         | 04.091          | Melo FHC         | 02.035, 02.042, |
| Martins MR         | 04.083          |                  | 02.048, 02.059  |
| Martins RD         | 09.153          | Melo GS          | 05.038          |
| Martins TA         | 08.001, 08.002  | Melo IM          | 04.040, 04.048, |
| Martins TC         | 09.081          |                  | 04.058, 04.063, |
| Martins TMM        | 09.141          |                  | 04.092          |
| Martins-Ferreira J | 01.019, 09.073  | Melo KM          | 09.060          |
| Mascarello A       | 10.005          | Melo PA          | 06.013, 09.001, |
| Mata AMOF          | 01.026, 09.116, |                  | 09.041, 09.061  |
|                    | 11.020          | Melo PH          | 04.113, 04.122  |
| Materazzi S        | 05.019          | Melo RL          | 10.012          |
| Matheus FC         | 02.014          | Melo THC         | 09.075          |
| Matheus ME         | 04.083          | Melo VCS         | 09.075          |
| Matos NA           | 04.088, 04.101  | Mendes CRM       | 03.014          |
| Matos NS           | 10.024          | Mendes EG        | 09.083, 09.084  |
| Matos SO           | 09.048, 09.070, | Mendes JC        | 08.001, 08.002  |
|                    | 09.103          | Mendes MB        | 09.110, 09.121  |
| Mattaraia VGM      | 05.007          | Mendes RFV       | 09.151          |
| Mechoulam R        | 03.007          | Mendes SJ        | 09.049          |
| Medeiros AC        | 09.022          | Mendes SJF       | 04.056          |
| Medeiros DC        | 05.028          | Mendes TS        | 01.023, 04.027  |
| Medeiros IA        | 06.039          | Mendes WO        | 04.096          |
| Medeiros JR        | 09.124          | Mendonça DS      | 10.021          |
| Medeiros JVR       | 05.050, 07.001, | Mendonça EF      | 09.067          |
|                    | 07.005, 07.006, | Mendonça LC      | 10.010          |
|                    | 07.012, 09.090  | Mendonça MCP     | 02.033          |
| Medeiros LF        | 04.012, 04.019, | Mendonça VA      | 01.023, 04.097  |
|                    | 05.003, 08.004  | Menegatti R      | 01.002, 02.023, |
| Medeiros MAS       | 09.031          |                  | 05.004, 05.016, |
| Medeiros MM        | 09.146          |                  | 05.026, 05.038  |
| Medeiros N         | 03.009          | Meneses GC       | 09.008          |
| Medeiros RJV       | 07.011          | Menezes GB       | 04.123          |
| Medeiros SC        | 09.034          | Menezes IRA      | 02.056, 04.079, |
| Meira AS           | 01.018, 10.003  |                  | 09.119          |
| Meireles CB        | 11.002, 11.005  | Menezes KLS      | 04.097          |
| Meireles DRP       | 09.024, 10.015  | Menezes PVA      | 04.020          |
| Meirelles LGR      | 09.001          | Menezes RRPPB    | 01.021, 09.042, |
| Melgarejo AR       | 09.136          |                  | 09.104, 09.155  |
| Mello CF           | 02.005, 02.010, | Menezes-Garcia Z | 04.001, 04.060, |
|                    | 03.005          |                  | 04.085          |
| Mello CP           | 01.021, 09.042  | Mesquita JWC     | 09.092, 09.093  |
| Mello GC           | 04.047, 04.081  | Mesquita LSS     | 09.092, 09.093  |

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| Mestrinerer FLAC   | 01.029          | Moraes MEA     | 06.002, 11.024, |
| Metz VG            | 02.038          |                | 11.027          |
| Meurer L           | 05.003, 05.003  | Moraes MO      | 06.002, 10.003, |
| Meyer-Fernandes JR | 04.011          |                | 10.009, 10.017, |
| Meyrelles SS       | 06.021          |                | 11.024, 11.027  |
| Mielcke TR         | 10.005          | Moraes NF      | 10.012          |
| Milanesi LH        | 02.010          | Morais CM      | 01.023, 04.027, |
| Milani H           | 02.020, 02.034  |                | 04.096, 04.097  |
| Milet RRC          | 04.117          | Morais GB      | 09.094, 09.152  |
| Militão GCG        | 09.040, 10.009  | Morais ICO     | 09.153, 09.155  |
| Miranda ALP        | 05.040, 05.053, | Morais ICPS    | 09.124          |
|                    | 09.063          | Morais JAV     | 04.095, 04.096, |
| Miranda CAS        | 06.007          |                | 04.097          |
| Miranda KM         | 05.028          | Morais PAF     | 04.095, 04.096, |
| Miranda Neto M     | 08.008, 08.008, |                | 04.097          |
|                    | 09.035          | Morandi V      | 04.031          |
| Miranda PCML       | 10.026          | Moreira AP     | 09.095          |
| Miranda VC         | 09.121          | Moreira CC     | 05.040          |
| Miranda-Ferreira R | 06.026          | Moreira FA     | 03.012, 03.015, |
| Mirim AFMN         | 04.121          |                | 03.018, 05.017  |
| Miyoshi E          | 02.029          | Moreira LN     | 06.014          |
| Mizokami SS        | 05.018, 05.033, | Moreira LP     | 04.025          |
|                    | 09.087          | Moreira LS     | 09.120          |
| Mochly-Rosen D     | 05.037          | Moreira SFS    | 08.004          |
| Mocoso JAR         | 09.149          | Moreira TA     | 09.130          |
| Monteiro AB        | 02.056, 09.119  | Moreira TS     | 02.037, 02.047, |
| Monteiro C         | 04.086          |                | 02.051          |
| Monteiro DAM       | 09.048, 09.070, | Moreli ML      | 09.138          |
|                    | 09.103          | Moreno GTA     | 09.026, 09.086  |
| Monteiro DU        | 01.005          | Moreno LCGAI   | 02.058          |
| Monteiro FP        | 04.026          | Moreno LMC     | 04.023          |
| Monteiro HSA       | 06.009, 06.018, | Moret K        | 04.086          |
|                    | 06.056, 06.060, | Moretti M      | 02.014, 02.029  |
|                    | 09.023, 09.072, | Morgado-Diaz J | 04.031          |
|                    | 09.094, 09.139, | Morrone FB     | 01.006, 04.009, |
|                    | 09.152, 09.153, |                | 09.020, 09.033, |
|                    | 09.155          |                | 10.010, 10.016  |
| Monteiro PF        | 06.047          | Moscato CH     | 04.087          |
| Monteiro S H       | 06.024          | Mosqueira VCF  | 06.017, 08.001, |
| Monteiro Silva JF  | 04.061          |                | 08.002, 11.023, |
| Monteiro VS        | 05.029, 09.078  |                | 11.025          |
| Monteiro-Machado M | 09.041          | Mota AS        | 09.080, 09.082, |
| Monteiro-Silva JF  | 04.067, 05.015  |                | 09.122          |
| Montenegro RC      | 01.010, 10.022  | Mota FVB       | 04.028          |
| Moraes J           | 04.037, 09.113  | Mota JM        | 04.107          |
| Moraes JA          | 04.030, 04.031  | Mota JMSC      | 04.113          |

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| Mota NS           | 10.006          | Nascimento JLM      | 04.042, 09.080, |
| Motoyama AB       | 10.024          |                     | 09.082          |
| Motta JR          | 11.007          | Nascimento KS       | 04.102          |
| Motta NAV         | 06.029, 06.044  | Nascimento NRF      | 02.057, 06.006, |
| Moura AF          | 10.017          |                     | 06.011, 06.012, |
| MOURA APG         | 09.024, 10.014, |                     | 06.028, 06.046, |
|                   | 11.022          |                     | 06.059, 09.017, |
| Moura GR          | 09.095          |                     | 09.142          |
| Moura IJL         | 09.124          | Nascimento RF       | 07.007, 07.009, |
| Moura LHP         | 06.042          |                     | 07.016          |
| Moura MT          | 01.012          | Nascimento RRG      | 04.080, 11.015  |
| Moura MTD         | 06.035          | Nascimento TG       | 01.012, 06.035  |
| Moura Neto LI     | 04.116          | Nascimento-Silva V  | 04.031          |
| Moura RS          | 09.109, 09.118  | Nascimento-Viana JB | 01.003, 01.004  |
| Moura TR          | 04.046, 04.052  | Nassar EJ           | 10.007          |
| Moura-da-Silva AM | 05.020          | Nassini R           | 05.019          |
| Mourão PAS        | 09.132          | Naves-de-Souza DL   | 09.016          |
| Muchale AV        | 08.004          | Negreiros C         | 04.035          |
| Mujica EMM        | 05.036          | nemmar A            | 09.054          |
| Muller M          | 02.005, 02.008  | Nencioni ALA        | 09.036, 09.047  |
| Muniz RP          | 09.151          | Nepel A             | 09.050          |
| Muniz VM          | 03.011          | Néris PLN           | 09.143          |
| Murata GM         | 09.009          | Néry NM             | 09.111          |
| Muscará M         | 04.049, 04.057  | Neta MJCN           | 06.037          |
| Musial DC         | 06.026          | Neto BM             | 09.147          |
| Muylaert FF       | 11.010          | Neto FWS            | 09.028          |
| Muzitano MF       | 09.095          | Neto JCS            | 09.068          |
| <b>N</b>          |                 | Neto JO             | 09.139          |
| Nadur-Andrade N   | 04.072          | Neto PAN            | 09.133          |
| Naime ACA         | 04.026, 04.032, | Neto VM             | 09.049          |
|                   | 04.118          | Netto BS            | 05.037          |
| Nakamitsu PFZ     | 04.094          | Neves CL            | 09.044          |
| Napimoga JTC      | 05.052          | Neves NCV           | 06.062          |
| Nardi GM          | 06.030, 06.032, | Nicolau LAD         | 07.001, 07.005, |
|                   | 06.033          |                     | 07.011, 09.090, |
| Nascimento DC     | 04.070          |                     | 09.124          |
| Nascimento DD     | 05.046          | Nicoletti NF        | 01.006, 09.020  |
| Nascimento DF     | 11.024, 11.027  | Nóbrega FC          | 06.048          |
| Nascimento EP     | 02.056, 09.119  | Nóbrega FFF         | 05.010          |
| Nascimento FLF    | 02.031          | Nobrega N           | 06.007          |
| Nascimento GJ     | 09.011          | Nobrega RF          | 09.075          |
| Nascimento GS     | 09.082, 09.122  | Noda JM             | 11.003          |
| Nascimento JH     | 01.025          | Noël F              | 01.002, 01.003, |
| Nascimento JHM    | 06.054          |                     | 01.004, 01.009, |
|                   |                 |                     | 01.013, 01.019, |
|                   |                 |                     | 09.073, 10.011  |

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| Nogueira AF     | 04.027          | Oliveira HD  | 09.023          |
| Nogueira CW     | 02.049          | Oliveira ICM | 02.017, 02.036, |
| Nogueira FC     | 01.015          |              | 02.040, 02.054  |
| Nogueira GHC    | 04.040          | Oliveira IMB | 06.006, 06.011, |
| Nonato DTT      | 02.031          |              | 06.046          |
| Norma           | 10.025          | Oliveira IS  | 09.004          |
| Noronha JC      | 10.008          | Oliveira IS  | 09.090          |
| Noseda MD       | 09.077          | Oliveira JM  | 09.022          |
| Nouailhetas VLA | 07.003, 09.064  | Oliveira JMG | 09.117          |
| Nunes AF        | 09.018, 09.127  | Oliveira JMS | 06.035          |
| Nunes EA        | 02.032, 08.004  | Oliveira JS  | 09.089          |
| Nunes ELC       | 01.001          | Oliveira LC  | 03.003          |
| Nunes IKC       | 04.082, 08.003  | Oliveira LM  | 02.037, 06.034, |
| Nunes LCC       | 09.116          |              | 09.144          |
| Nunes LF        | 09.135          | Oliveira LMS | 04.061, 04.067, |
| Nunes LR        | 04.064          |              | 05.015          |
| Nunes PHM       | 09.018, 09.062, | Oliveira LP  | 05.004, 05.016, |
|                 | 09.090          |              | 05.026          |
| Nunes RJ        | 10.005          | Oliveira MC  | 04.064          |
| Nuzzo G         | 10.013          | Oliveira MR  | 09.143          |
| <b>O</b>        |                 | Oliveira MS  | 02.026, 02.027, |
|                 |                 |              | 09.069          |
| Ognibene DT     | 09.109          | Oliveira NF  | 04.011          |
| Okinga A        | 09.101, 09.109, | Oliveira PA  | 02.052          |
|                 | 09.118          | Oliveira PF  | 10.007          |
| Oliveira AC     | 03.018          | Oliveira PLN | 03.020          |
| Oliveira AM     | 09.076, 09.102  | Oliveira PRB | 09.027, 09.101  |
| Oliveira AP     | 06.042, 09.018, | Oliveira R   | 06.057          |
|                 | 09.110, 09.121, | Oliveira RAM | 11.026          |
|                 | 09.124, 09.127  | Oliveira RB  | 04.016, 04.054, |
| Oliveira AS     | 03.009          |              | 09.109, 09.118  |
| Oliveira C      | 04.019, 08.004  | Oliveira RCM | 09.004, 09.018, |
| Oliveira CAF    | 07.004          |              | 09.055, 09.090, |
| Oliveira CDM    | 04.079          |              | 09.127          |
| Oliveira DF     | 09.071          | Oliveira RDR | 04.108          |
| Oliveira DMN    | 06.056, 06.060  | Oliveira RE  | 09.098          |
| Oliveira DR     | 09.013          | Oliveira RMW | 02.020, 02.034  |
| Oliveira EB     | 01.017          | Oliveira RS  | 09.066          |
| Oliveira FA     | 04.103, 05.045, | Oliveira SC  | 02.017          |
|                 | 09.004          | Oliveira SDS | 04.011          |
| Oliveira FCE    | 10.018          | Oliveira SFC | 10.008          |
| Oliveira FRMB   | 09.026, 09.086  | Oliveira SHP | 04.075          |
| Oliveira GA     | 09.111          | Oliveira SLV | 04.091          |
| Oliveira GAL    | 09.034          | Oliveira SM  | 05.005          |
| Oliveira GB     | 02.046          |              |                 |
| Oliveira GLS    | 09.091, 11.026  |              |                 |

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| Oliveira TB       | 01.023, 04.028,<br>04.096, 04.097,<br>09.151 | Paulo LL<br>Paulo M<br>Paulo MEFV | 07.016, 09.112<br>06.020, 06.042<br>09.036 |
| Oliveira THC      | 05.014                                       | PauloLL                           | 07.015                                     |
| Oliveira TS       | 05.026, 06.034,<br>09.144                    | Pavanato MA                       | 02.004, 08.005,<br>09.010                  |
| Oliveira VLS      | 04.112, 05.014                               | Paz IA                            | 06.012                                     |
| Oliveira-Filho AA | 06.039                                       | Pazini F                          | 05.038                                     |
| Oliveira-Filho RM | 04.013, 04.024                               | Pedrazzi JFC                      | 03.007                                     |
| Oliveira-Lima AJ  | 03.003, 03.013                               | Pedrazzoli Jr J                   | 04.087                                     |
| Oliveria JP       | 04.049                                       | Pedrino GR                        | 06.008                                     |
| Olsen PC          | 04.021, 04.120                               | Pedrosa MCG                       | 09.083                                     |
| Ornelas FGI       | 04.011                                       | Pedrosa RC                        | 10.006                                     |
| Osório MS         | 11.020                                       | Peigneur S                        | 09.039, 09.053                             |
| Ourique F         | 10.006                                       | Peixoto LF                        | 06.034                                     |
| Ourique GM        | 02.004, 08.005,<br>09.010                    | Peña MC                           | 02.018                                     |
|                   |                                              | Penha JR                          | 09.138                                     |
|                   |                                              | Penido C                          | 04.017, 04.018,<br>04.035, 04.086          |

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| Paccez JD            | 10.016                    | Perassa LA       | 06.049, 06.061                                                  |
| Pachêco JMS          | 05.029                    | Pereira AB       | 09.066                                                          |
| Pacífico DM          | 07.001, 07.005,<br>07.006 | Pereira ABD      | 09.043                                                          |
| Padua TA             | 04.018                    | Pereira AC       | 09.043                                                          |
| Pádua TA             | 04.017, 04.078            | Pereira AOB      | 04.079                                                          |
| Paglioli-Neto E      | 10.010                    | Pereira AS       | 09.138                                                          |
| Pail PB              | 03.002                    | Pereira BG       | 10.019                                                          |
| Paiva RCA            | 06.001                    | Pereira CA       | 01.029                                                          |
| Paiva YTCN           | 04.023                    | Pereira DIB      | 01.005                                                          |
| Palei AC             | 11.009                    | Pereira Filho SM | 09.048, 09.070,<br>09.103                                       |
| Pamplona TL          | 08.010, 11.029            | Pereira ICP      | 04.056                                                          |
| Pantoja PS           | 01.023                    | Pereira J        | 06.057                                                          |
| Panunto PC           | 09.107, 09.136            | Pereira JC       | 09.140                                                          |
| Pão CRR              | 04.021, 04.077            | Pereira JF       | 09.045                                                          |
| Paracampo NENP       | 09.114                    | Pereira JM       | 06.009, 06.018,<br>06.056, 06.060                               |
| Parada CA            | 05.001                    | Pereira KMA      | 05.030, 05.032,<br>05.052, 09.022,<br>09.048, 09.056,<br>09.085 |
| Paredes-Gamero EJ    | 09.131                    |                  |                                                                 |
| Parente ATPP         | 09.022                    |                  |                                                                 |
| Parente JM           | 09.031                    |                  |                                                                 |
| Parreiras-e-Silva LT | 01.017                    |                  |                                                                 |
| Partata WA           | 02.004                    | Pereira LP       | 01.015                                                          |
| Pase CS              | 02.003                    | Pereira MG       | 01.015, 07.005,<br>09.104                                       |
| Patti CL             | 03.003                    |                  |                                                                 |
| Paula JR             | 09.097                    | Pereira MGP      | 05.047                                                          |
| Paula TD             | 06.022                    | Pereira PJS      | 05.008                                                          |
| Pauletti PM          | 09.003                    | Pereira RA       | 08.008, 09.035                                                  |

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| Pereira SC         | 06.017          | Pinto FA      | 04.004          |
| Pereira TCB        | 04.009, 09.033  | Pinto FMM     | 04.098          |
| Pereira TP         | 01.021, 09.042  | Pinto IR      | 09.048, 09.056, |
| Pereira VBM        | 04.039, 04.099, |               | 09.070, 09.103  |
|                    | 09.120          | Pinto LC      | 10.022          |
| Pereira-Ribeiro C  | 04.051          | Pinto LF      | 10.016          |
| Peres RS           | 04.108, 04.109  | Pinto LG      | 04.108, 04.109  |
| Perez AC           | 05.009          | Pinto LMO     | 06.054          |
| Perin AP           | 02.028, 02.030  | Pinto MNDS    | 03.021          |
| Pernomian L        | 06.022          | Pinto SCL     | 10.029          |
| Peroza LR          | 02.015, 09.013, | Pinto VP      | 09.103          |
|                    | 09.028, 09.057  | Pinto VPT     | 05.030, 05.032, |
| Perretti M         | 04.010, 04.022  |               | 05.052, 09.022, |
| Pês TS             | 02.004, 08.005, |               | 09.048, 09.056, |
|                    | 09.010          |               | 09.070          |
| Pesarico AP        | 02.049          | Piovezan AP   | 09.081          |
| Pesquero JB        | 01.006, 04.016  | Pires AF      | 05.047, 09.125  |
| Pessoa C           | 10.008, 10.009  | Pires AMG     | 09.079          |
| Pessoa CO          | 01.018, 10.003, | Pires FG      | 04.069          |
|                    | 10.018          | Pires K       | 09.135          |
| Pessoa DLR         | 07.018          | Pires LC      | 09.059          |
| Pessôa HLF         | 09.012          | Pissinati L   | 11.008          |
| Pessoa ODL         | 09.072, 09.135, | Pita JCLR     | 10.028          |
|                    | 09.148, 09.154, | Poersch AB    | 02.002          |
|                    | 10.013, 10.029  | Pohlmann AR   | 04.119          |
| Piauilino CA       | 05.031, 05.045, | Pompeu TET    | 01.002          |
|                    | 09.124          | Pons A        | 04.035          |
| Picolo G           | 05.007          | Ponte CG      | 01.025          |
| Pierdoná TM        | 04.090, 04.117, | Ponte EL      | 09.009          |
|                    | 11.015          | Pontes AV     | 11.024, 11.027  |
| Pierri EG          | 09.007          | Pontes MCD    | 02.017, 02.036, |
| Pigatto GR         | 05.024, 11.003  |               | 02.054          |
| Pimenta ATA        | 04.080, 11.015  | Porciúncula L | 02.028          |
| Pimenta LA         | 09.045          | Portaro FCV   | 09.036          |
| Pimentel MD        | 09.023          | Portela JVF   | 09.115          |
| Pinheiro AA        | 04.017          | Portela VS    | 04.116          |
| Pinheiro ACV       | 10.022          | Porto GP      | 02.005          |
| Pinheiro CG        | 09.102          | Porto M       | 11.008          |
| Pinheiro DP        | 10.027          | Possebon MI   | 05.033          |
| Pinheiro Torres AS | 04.047          | Potje SR      | 06.049, 06.061  |
| Pinheiro-Torres SA | 04.081          | Prado DS      | 04.113          |
| Pinho V            | 04.010, 04.020, | Prado LD      | 04.099          |
|                    | 04.022, 04.123  | Prado WA      | 05.041          |
| Pinho-Ribeiro FA   | 05.018, 05.034  | Prando EC     | 01.017          |
| Pinto BLS          | 09.049          | Prando TBL    | 09.014, 09.019  |
| Pinto E            | 04.014          |               |                 |



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| Prata MMG    | 02.057, 06.056,<br>06.060         | Ramos MV         | 04.023         |
| Prediger RD  | 02.014, 02.029,<br>02.049, 02.052 | Ramos VM         | 04.066         |
| Prediger RDS | 02.044                            | Randazzo-Moura P | 09.096, 09.145 |
| Pulcinelli R | 02.032                            | Rangel DL        | 02.028         |
| Pupo AS      | 03.016                            | Rangel PFG       | 04.066         |
| Putarov NB   | 10.021                            | Rao VS           | 07.014, 09.060 |
|              |                                   | Raquel           | 10.025         |
|              |                                   | Rebecca ESW      | 04.062         |

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| Quadros AU         | 05.027                            | Reckziegel P  | 02.022, 02.025                    |
| Quaresma MP        | 07.001, 07.005,<br>07.006         | Regadas RP    | 08.010, 11.029                    |
| Queiroz APS        | 05.039                            | Reginatto FH  | 09.097                            |
| Queiroz BCSH       | 09.147                            | Regis SRS     | 06.028                            |
| Queiroz CMJ        | 04.002                            | Rêgo SC       | 01.026, 11.020                    |
| Queiroz Santos GC  | 09.129                            | Reinheimer JB | 02.021                            |
| Queiroz TM         | 06.039                            | Reis AC       | 04.020                            |
| Queiroz-Junior CM  | 01.022                            | Reis AL       | 04.071                            |
| Quevedo A          | 04.019                            | Reis CF       | 06.008                            |
| Quibem LA          | 06.032                            | Reis D        | 06.007                            |
| Quindere JR        | 09.015                            | Reis EM       | 03.019, 09.028                    |
| Quinet YP          | 01.021, 09.017                    | Reis Filho AC | 05.031, 05.049,<br>05.049, 05.049 |
| Quintans Junior LJ | 04.037                            | Reis FM       | 07.013                            |
| Quintão NLM        | 05.013                            | Reis IDG      | 09.100                            |
| Quintas LE         | 09.073                            | Reis MC       | 04.083                            |
| Quintas LEM        | 01.009, 01.013,<br>01.019, 10.011 | Reis RI       | 01.017                            |
| Quirino ZGM        | 07.002                            | Reis-Filho AC | 05.045                            |
|                    |                                   | Rendeiro MM   | 01.013                            |
|                    |                                   | Rennó AL      | 09.107, 09.136                    |
|                    |                                   | Resende AC    | 09.027, 09.101,<br>09.109, 09.118 |

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| Rabelo LFA   | 04.066                    | Resstel LB  | 01.029                                               |
| Rachetti VPS | 02.012                    | Resstel LBM | 02.053                                               |
| Rachid MA    | 04.038, 04.046,<br>04.052 | Restini CBA | 06.001, 06.042                                       |
| Raimundo JM  | 09.095                    | Rezende BM  | 04.123                                               |
| Ralph ACL    | 01.010                    | Rezende V   | 11.009                                               |
| Ramalho FS   | 07.004                    | Ribas JAS   | 11.028                                               |
| Ramalho LNZ  | 07.004                    | Ribeiro AF  | 09.122                                               |
| Rambo LM     | 02.010                    | Ribeiro ALC | 04.010, 04.055                                       |
| Ramos A      | 09.025                    | Ribeiro ARS | 07.019                                               |
| Ramos AGB    | 04.079                    | Ribeiro ASR | 03.016                                               |
| Ramos BCJ    | 09.066                    | Ribeiro EAN | 01.012, 01.016,<br>01.016, 01.016,<br>01.016, 06.035 |
| Ramos CDL    | 09.138, 09.141            | Ribeiro IM  | 05.048                                               |
| Ramos INF    | 10.022                    | Ribeiro JH  | 09.109                                               |
| Ramos MFS    | 09.063                    | Ribeiro JT  | 06.032                                               |

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| Ribeiro KA          | 09.048, 09.070,<br>09.103                                                                                     | Rocha NN            | 06.031                                               |
| Ribeiro L R         | 02.043                                                                                                        | Rocha RG            | 11.011                                               |
| Ribeiro LR          | 02.002, 02.026,<br>02.027, 09.069                                                                             | Rocha RPF           | 04.002, 04.112                                       |
| Ribeiro LS          | 04.002, 04.105,<br>04.106                                                                                     | Rocha SLA           | 09.050                                               |
| Ribeiro ML          | 04.087                                                                                                        | Rocha T             | 04.087, 09.099,<br>09.145                            |
| Ribeiro MNS         | 09.092, 09.093                                                                                                | Rocha TM            | 04.100, 04.117                                       |
| Ribeiro NA          | 09.126                                                                                                        | Rocha WV            | 04.052                                               |
| Ribeiro RA          | 04.015, 04.027,<br>04.039, 04.040,<br>04.058, 04.063,<br>04.097, 04.098,<br>04.099, 04.107,<br>07.012, 09.120 | Rocha-e-Silva TAA   | 02.028, 09.006                                       |
|                     |                                                                                                               | Rodvalho GV         | 08.001, 08.002                                       |
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|                     |                                                                                                               | Rodrigues CDM       | 11.002, 11.005                                       |
|                     |                                                                                                               | Rodrigues CKS       | 02.056, 04.079,<br>09.119                            |
| Ribeiro RG          | 04.090                                                                                                        | Rodrigues DF        | 04.064                                               |
| Ribeiro TC          | 01.005                                                                                                        | Rodrigues DJ        | 10.008                                               |
| Ribeiro TP          | 06.003                                                                                                        | Rodrigues FAP       | 06.018, 06.056,<br>06.060, 09.152                    |
| Ribeiro-Barbosa PC  | 03.013                                                                                                        |                     |                                                      |
| Ribeiro-Costa RM    | 09.129                                                                                                        | Rodrigues FG        | 04.038                                               |
| Ricardo HD          | 09.041                                                                                                        | Rodrigues GC        | 02.017, 02.036,<br>02.040                            |
| Ricardo-da-Silva FY | 04.013, 04.024                                                                                                |                     |                                                      |
| Richard S           | 11.025                                                                                                        | Rodrigues JAG       | 09.085                                               |
| Rigo F              | 04.053, 05.005                                                                                                | Rodrigues JBR       | 02.058                                               |
| Rigoni VLS          | 07.003, 09.005,<br>09.064, 09.131                                                                             | Rodrigues JQD       | 06.016, 06.058                                       |
| Rios ERV            | 04.068, 05.044,<br>09.037, 09.038                                                                             | Rodrigues LB        | 02.056, 04.079,<br>09.119                            |
| Rivanor RLC         | 05.029, 09.078,<br>09.085                                                                                     | Rodrigues LC        | 09.011                                               |
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| Rocha AO            | 09.021, 09.092,<br>09.093                                                                                     | Rodrigues MAP       | 09.107, 09.136                                       |
| Rocha APM           | 09.027, 09.109,<br>09.118                                                                                     | Rodrigues ORL       | 02.023, 09.097                                       |
|                     |                                                                                                               | Rodrigues PJ        | 04.041                                               |
| Rocha BA            | 04.041, 04.045,<br>04.062, 04.073                                                                             | Rodrigues R S       | 09.074                                               |
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| Rocha DD            | 10.027                                                                                                        | Rodrigues RS        | 01.014, 09.016                                       |
| Rocha JBT           | 01.008                                                                                                        | Rodrigues S         | 04.014                                               |
| Rocha KKHR          | 06.026                                                                                                        | Rodrigues SA        | 11.010                                               |
| Rocha LW            | 05.001                                                                                                        | Rodrigues- Silva AC | 09.077, 09.079                                       |
| Rocha MBS           | 11.024, 11.027                                                                                                | Rodrigues V M       | 09.074                                               |
| Rocha ML            | 06.008, 08.006                                                                                                | Rodrigues VC        | 04.021                                               |
| Rocha MS            | 09.110                                                                                                        | Rodrigues VG        | 05.009                                               |
| Rocha NFM           | 04.068, 05.044,<br>09.037, 09.038                                                                             | Rodrigues VM        | 01.014, 09.016                                       |
|                     |                                                                                                               | Rodrigues-Simioni L | 02.028, 09.006,<br>09.096, 09.099,<br>09.108, 09.145 |

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| Rogalski F       | 11.007          | Sales LC         | 08.010, 11.024, |
| Rogers M         | 09.053          |                  | 11.027, 11.029  |
| Rojas-Muscoso JA | 11.008          | Sales RPS        | 07.016          |
| Rolim HML        | 02.058          | Sales VAW        | 09.075          |
| Rolim LA         | 09.088          | Sales VS         | 02.056, 04.079, |
| Romeiro LAS      | 01.003, 01.004, |                  | 09.119          |
|                  | 10.024          | Salgado PRR      | 03.011          |
| Romero TR        | 05.017          | Salvador M       | 03.009          |
| Romero TRL       | 05.009          | Salvadori MGSS   | 03.011          |
| Romero-Vargas FF | 09.099          | Sampaio ALF      | 10.021          |
| Rosa HZ          | 02.038          | Sampaio FC       | 10.014, 10.028, |
| Rosa LD          | 06.037          |                  | 11.006          |
| Rosas EC         | 04.076, 04.078  | Sampaio LP       | 04.095          |
| Rosing CK        | 04.012          | Sampaio RS       | 08.008, 09.032, |
| Rossaneis AC     | 05.041          |                  | 09.035, 09.140  |
| Rossato MF       | 05.019          | Sampaio SC       | 09.044, 09.045, |
| Rossi MH         | 10.006          |                  | 10.012          |
| Rovani BT        | 11.003          | Sampaio TB       | 02.049          |
| Roversi Kr       | 02.003, 02.024, | Sampaio TL       | 01.021, 09.042  |
|                  | 02.038, 02.045, | Sanches IC       | 04.089          |
|                  | 11.013          | Sanchez EF       | 09.077, 09.079  |
| Rowan EG         | 09.108          | Sandrim V        | 11.009          |
| Rozisky JR       | 04.012, 05.003, | Sannomiya P      | 04.025          |
|                  | 05.003, 05.011, | Sanny CG         | 09.145          |
|                  | 05.035          | Santa-Cecília FV | 05.025, 05.042  |
| Rubin M          | 02.005, 04.053  | Sant'Ana AEG     | 04.067, 05.015  |
| Rubin MA         | 02.008, 03.004, | Santana APM      | 04.069, 07.012  |
|                  | 03.005          | Santana D        | 04.037          |
| Ruginsk SG       | 01.029          | Santana D A R    | 05.043          |
| Russo RC         | 04.046, 04.122  | Santana DAR      | 05.021          |
| Ryffel B         | 04.108, 05.014  | Sant'Ana DMG     | 07.010          |
| Ryffel R         | 01.030          | Santana E        | 06.052          |
| <b>S</b>         |                 | Santana LNS      | 02.006          |
| Sabino KCC       | 04.004          | Santana MAN      | 04.033          |
| Sacchi J         | 06.057          | Santana MS       | 04.049          |
| Saccol EH        | 09.010          | Santana SS       | 01.001          |
| Saccol EMH       | 08.005          | Sant'Anna C M R  | 01.011          |
| Sachs D          | 05.014          | Santanna MB      | 05.021          |
| Salamoni SD      | 02.030          | Santiago GMP     | 09.040          |
| Salas CE         | 09.100, 09.106  | Santiago RF      | 05.050          |
| Saldanha GB      | 11.026          | Santiago RM      | 02.050          |
| Sales FAM        | 10.018          | Santo R          | 03.003          |
| Sales IRP        | 07.007, 09.112  | Santoro TT       | 04.005          |
| Sales KMO        | 04.054          | Santos A L Q     | 09.074          |
|                  |                 | Santos AA        | 04.054          |
|                  |                 | Santos AAJr      | 10.016          |

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|-----------------|------------------------------------------------------------------------------------|----------------------|-----------------------------------|
| Santos AC       | 02.010                                                                             | Santos MS            | 04.004                            |
| Santos AF       | 06.039                                                                             | Santos NPS           | 04.033                            |
| Santos AG       | 09.007                                                                             | Santos PC            | 04.105, 04.106                    |
| Santos AKFS     | 03.011                                                                             | Santos PS            | 09.046                            |
| Santos AO       | 05.032                                                                             | Santos R             | 03.013                            |
| Santos APX      | 02.048                                                                             | Santos RF            | 09.018, 09.127                    |
| Santos ARS      | 02.018, 04.044,<br>05.012, 09.081,<br>11.014                                       | Santos RRL           | 04.103                            |
|                 |                                                                                    | Santos RS            | 05.029, 05.032                    |
| Santos AS       | 04.074                                                                             | Santos RV            | 04.077                            |
| Santos BVO      | 09.131, 09.146                                                                     | Santos SL            | 04.050                            |
| Santos CCL      | 10.014, 10.028,<br>11.006                                                          | Santos SM            | 09.151                            |
|                 |                                                                                    | Santos VG            | 09.055, 09.100                    |
| Santos CEA      | 04.077                                                                             | Santos WC            | 05.045                            |
| Santos CF       | 06.012                                                                             | Santos-Filho OA      | 08.009                            |
| Santos CF       | 02.032, 02.057,<br>03.001, 06.006,<br>06.011, 06.028,<br>06.046, 09.017,<br>09.142 | Santos-Magalhães NS  | 02.058                            |
|                 |                                                                                    | Santurio JM          | 01.005                            |
| Santos DB       | 02.014                                                                             | Saraiva ALL          | 04.109                            |
| Santos EA       | 10.013, 11.019                                                                     | Sari MHM             | 02.049                            |
| Santos EAP      | 05.040                                                                             | Sarmento DM          | 09.011                            |
| Santos ECS      | 02.001                                                                             | Sarmento FQ          | 09.012                            |
| Santos FA       | 07.014, 09.055,<br>09.060                                                          | Saturnino-Oliveira J | 09.041                            |
| Santos Filho EX | 09.067                                                                             | Sauzem PD            | 04.053                            |
| Santos GA       | 01.017                                                                             | Savignon T           | 11.010                            |
| Santos GBM      | 04.090                                                                             | Savio LEB            | 04.011                            |
| Santos GCQ      | 09.080, 09.082,<br>09.122                                                          | Scarabelot VL        | 04.012, 04.019,<br>08.004         |
|                 |                                                                                    | Scaramello CBV       | 06.031, 06.054,<br>11.011, 11.018 |
| Santos GGL      | 05.048                                                                             | Scarpa P             | 02.044                            |
| Santos GRC      | 09.132                                                                             | Schaffer LF          | 02.015, 09.013,<br>09.057         |
| Santos GT       | 05.024                                                                             | Schamne MG           | 02.029                            |
| Santos IB       | 09.027, 09.101,<br>09.109, 09.118                                                  | Scheid T             | 02.004                            |
| Santos JMS      | 08.010, 11.029                                                                     | Schertler GF         | 01.017                            |
| Santos JSB      | 01.026                                                                             | Scheschowitsch K     | 06.043                            |
| Santos JVA      | 09.072                                                                             | Schezaro-Ramos R     | 09.096                            |
| Santos LCO      | 08.010, 11.029                                                                     | Schiefelbein N       | 02.002                            |
| Santos LKX      | 02.035, 02.042,<br>02.048, 02.059                                                  | Schmidt V            | 04.077                            |
| Santos MEP      | 06.042, 09.110,<br>09.124                                                          | Schindler B          | 09.002                            |
|                 |                                                                                    | Schini-Kerth VB      | 06.003                            |
| Santos ML       | 10.024                                                                             | Schlemper SRM        | 11.004                            |
| Santos MRV      | 09.110                                                                             | Schlemper V          | 11.004                            |
|                 |                                                                                    | Schmitz AE           | 02.044                            |
|                 |                                                                                    | Schneider R          | 02.032                            |
|                 |                                                                                    | Schneider RJ         | 03.001                            |
|                 |                                                                                    | Schoffer AP          | 02.008, 03.005                    |

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| Schöffner AP    | 03.004          | Silva BGB        | 08.010, 11.029  |
| Schramm VG      | 11.012          | Silva BIM        | 04.028, 04.028  |
| Schuster AJ     | 02.038          | Silva BLR        | 04.056          |
| Schwertner A    | 05.011          | Silva BR         | 06.015, 06.019, |
| Scoparo CT      | 09.051          |                  | 06.022, 06.023  |
| Scopel-Guerra A | 04.031          | Silva CAA        | 09.029          |
| Seabra-Filho FT | 06.009          | Silva CC         | 04.083          |
| Seeger RL       | 09.025          | Silva CLM        | 01.003, 01.004, |
| Segat GC        | 09.052          |                  | 01.007, 04.011  |
| Segundo SAS     | 08.010, 11.029  | Silva CMS        | 06.041          |
| Seito LN        | 04.017, 04.018, | Silva CMV        | 02.009          |
|                 | 04.078          | Silva CVNS       | 04.033          |
| Seixas FAV      | 11.017          | Silva DA         | 07.011          |
| Sena GM         | 09.083, 09.084  | Silva DN         | 05.051          |
| Sena KS         | 11.024, 11.027  | Silva DPB        | 05.004, 05.016, |
| Senécal J       | 01.006          |                  | 05.026          |
| Sereniki A      | 09.075          | Silva DT         | 09.059, 09.076  |
| Serpa RC        | 09.067          | Silva EJR        | 04.121          |
| Serra A         | 06.052          | Silva ELV        | 09.068          |
| Serra MB        | 09.021, 09.092, | Silva ET         | 08.009          |
|                 | 09.093          | Silva FCC        | 02.059          |
| Serra MF        | 04.021, 04.077  | Silva FH         | 01.014          |
| Servente P      | 09.126          | Silva Filho JCCL | 09.034          |
| Setim C         | 09.052          | Silva Filho RC   | 09.088          |
| Shimada ALB     | 04.014          | Silva Filho RN   | 07.002          |
| Siebert DA      | 05.012          | Silva FL         | 09.064          |
| Signor C        | 02.005, 02.008  | Silva FON        | 04.069          |
| Silva AAR       | 09.022, 09.048, | Silva GAB        | 09.100          |
|                 | 09.070, 09.103  | Silva GC         | 06.003          |
| Silva ACA       | 09.055          | Silva GCCS       | 01.001          |
| Silva ACL       | 09.134          | Silva GF         | 05.013          |
| Silva AJM       | 10.009          | Silva GP         | 04.004          |
| Silva AKM       | 07.002, 07.009  | Silva GR         | 09.019          |
| Silva AN        | 04.123          | Silva I          | 06.057          |
| Silva AO        | 10.001          | Silva IRF        | 09.145, 09.149  |
| Silva APG       | 09.142          | Silva JA Jr      | 06.052          |
| Silva APSCL     | 09.034          | Silva JBR        | 09.075          |
| Silva AR        | 01.001          | Silva JCG        | 01.012, 01.016, |
| Silva ARH       | 11.003          |                  | 01.016          |
| Silva AS        | 08.008, 09.035  | Silva JF         | 09.043          |
| Silva BA        | 07.017, 08.003, | Silva JL         | 09.075, 09.133  |
|                 | 08.008, 09.030, | Silva JLV        | 09.005, 09.064  |
|                 | 09.032, 09.035, | Silva JN         | 02.051          |
|                 | 09.131, 09.134, | Silva JPN        | 04.050          |
|                 | 09.140, 09.146  | Silva JR         | 04.108          |
| Silva BC        | 04.038          | Silva Jr JA      | 04.072          |

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| Silva JRL        | 11.019          | Silva RER        | 02.056          |
| Silva Junior ED  | 06.016, 06.058  | Silva RL         | 01.024, 01.030  |
| Silva Junior EN  | 10.018          | Silva RM         | 06.054, 09.117  |
| Silva Júnior JVM | 08.010, 11.029  | Silva RO         | 04.098, 07.011  |
| Silva KES        | 01.023, 05.047  | Silva RS         | 08.006          |
| Silva L          | 04.017          | Silva RV         | 05.040, 05.053  |
| Silva LL         | 09.002, 09.063  | Silva SN         | 09.021, 09.083, |
| Silva LM         | 09.123          |                  | 09.084          |
| Silva LMG        | 09.029          | Silva SRL        | 04.092          |
| Silva MAB        | 06.025          | Silva SV         | 04.083          |
| Silva MCC        | 09.030, 09.032, | Silva TA         | 01.022, 04.002, |
|                  | 09.146          |                  | 11.011          |
| Silva METM       | 09.151          | Silva TAF        | 06.039          |
| Silva MF         | 10.026          | Silva TFB        | 09.138          |
| Silva MGP        | 05.022          | Silva TG         | 04.028, 04.033, |
| Silva MIG        | 02.035          |                  | 09.040, 09.151  |
| Silva ML         | 02.006          | Silva TMS        | 09.026, 09.140  |
| Silva MLA        | 09.003          | Silva VA         | 09.012, 09.064  |
| Silva MM         | 07.011          | Silva-Alves KS   | 05.044          |
| Silva MN         | 05.039, 10.022  | Silva-Comar FMS  | 04.041, 04.045, |
| Silva MP         | 04.089          |                  | 04.073          |
| Silva MS         | 09.024, 09.086  | Silva-Cunha A    | 10.019          |
| Silva MTB        | 09.098          | Silva-Filho JC   | 06.042, 09.110  |
| Silva MTG        | 11.021          | Silva-Filho SE   | 04.041, 04.045, |
| Silva NA         | 09.153          |                  | 04.062, 04.073  |
| Silva Neto GJ    | 04.061          | Silva-Freitas FV | 09.004, 09.090  |
| Silva NKG T      | 04.067, 05.015  | Silva-Neto GJ    | 04.067, 05.015  |
| Silva NLC        | 09.063          | Silva-Neto JC    | 09.088          |
| Silva NP         | 01.009          | Silveira ACP     | 09.074          |
| Silva NR         | 03.007          | Silveira ALM     | 04.064          |
| Silva OR         | 07.005          | Silveira D       | 10.024          |
| Silva PBN        | 09.040          | Silveira ER      | 04.090, 04.100, |
| Silva PI         | 09.006          |                  | 04.114, 04.117, |
| Silva PLB        | 06.018, 06.056, |                  | 09.072, 09.135, |
|                  | 06.060, 09.023  |                  | 10.017          |
| Silva PMR        | 04.043, 04.084, | Silveira JAM     | 09.023, 09.072, |
|                  | 04.119          |                  | 09.094, 09.139, |
| Silva PMR        | 04.005, 04.007, |                  | 09.152, 09.153, |
|                  | 04.021, 04.021, |                  | 09.155          |
|                  | 04.022, 04.059, | Silveira TS      | 09.122          |
|                  | 04.065, 04.077, | Silveira WF      | 09.083, 09.084  |
|                  | 04.082, 04.120, | Simões MJ        | 07.003          |
|                  | 08.009          | Simões RL        | 04.051          |
| Silva RBM        | 09.033          | Simões RR        | 05.012          |
| Silva RC         | 04.112          | Simplício CAN    | 04.102          |
| Silva RCF        | 06.027          | Simplício GN     | 11.002, 11.005  |

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| Simplicio JA        | 06.010          | Sousa AKA     | 07.018          |
| Sinhorin AP         | 10.008          | Sousa CGBL    | 07.002, 07.007  |
| Siqueira AM         | 05.046          | Sousa DP      | 04.103, 05.045, |
| Siqueira MVA        | 04.101          |               | 05.049, 05.049, |
| Siqueira RJB        | 06.046          |               | 05.049, 09.055, |
| Siqueira RMP        | 03.022          |               | 09.091, 09.127, |
| Sluka KA            | 04.044          |               | 11.026          |
| Smith MC            | 01.010          | Sousa EBVS    | 09.091, 09.091  |
| Soares AM           | 09.111          | Sousa FBM     | 07.006          |
| Soares BM           | 09.120, 10.003, | Sousa FCF     | 02.017, 02.035, |
|                     | 10.022          |               | 02.036, 02.040, |
| Soares CR           | 09.083, 09.084  |               | 02.042, 02.048, |
| Soares de Moura R   | 09.027, 09.101  |               | 02.054, 02.059, |
| Soares EL           | 11.004          |               | 05.044, 09.037, |
| Soares ES           | 02.033          |               | 09.038, 09.103  |
| Soares KA           | 04.048, 04.092  | Sousa FIAB    | 04.056          |
| Soares MBP          | 05.048, 05.051, | Sousa GF      | 09.034          |
|                     | 09.050          | Sousa GS      | 09.147          |
| Soares MSAV         | 09.143          | Sousa JA      | 09.147          |
| Soares PMG          | 01.023, 04.027, | Sousa JP      | 09.012, 09.101  |
|                     | 04.095, 04.096, | Sousa LGF     | 06.012, 06.028  |
|                     | 04.097, 05.047, | Sousa LP      | 04.010, 04.020, |
|                     | 07.005, 07.011, |               | 04.022, 04.055  |
|                     | 07.012, 09.125  | Sousa NA      | 07.006          |
| Soares Rachetti VP  | 02.007          | Sousa Neto BP | 04.103          |
| Soares TC           | 02.012          | Sousa NRP     | 04.098, 09.120  |
| Soares-Rachetti VP  | 02.009, 02.013, | Sousa PB      | 02.036, 02.048, |
|                     | 03.010, 03.014  |               | 02.054          |
| Sobral ACM          | 09.036          | Sousa PCP     | 09.153, 09.155  |
| Sobral MV           | 09.024, 09.143, | sousa PL      | 09.104          |
|                     | 10.014, 10.015, | Sousa PMB     | 09.062          |
|                     | 10.028, 11.006, | Sousa PRR     | 08.010, 11.029  |
|                     | 11.022          | Sousa TKG     | 10.014, 10.015, |
| Sobrinho Junior EPC | 09.128          |               | 11.022          |
| Sobrinho TJSP       | 09.133          | Sousa TS      | 09.154, 10.013  |
| Sodré TP            | 09.021          | Sousa TV      | 04.104          |
| Sollon C            | 04.115          | Souza A       | 04.019, 05.003, |
| Sollon CS           | 04.029          |               | 05.003          |
| Sonego AB           | 03.008          | Souza AA      | 08.008, 09.035  |
| Sonego F            | 04.122          | Souza AAP     | 04.083          |
| Soriani FM          | 01.022, 04.022, | Souza ACA     | 04.037, 04.049  |
|                     | 04.046, 04.052, | Souza ACM     | 06.017, 11.023  |
|                     | 05.014          | Souza AF      | 03.014          |
| Sousa A             | 02.055          | Souza AG      | 10.014          |
| Sousa ACP           | 09.115          | Souza AS      | 05.036          |
| Sousa AG            | 11.006          |               |                 |

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| Souza DG            | 01.022, 04.001,<br>04.002, 04.060,<br>04.085, 04.105,<br>04.106, 04.112,<br>05.014 | Stefany GR<br>Steffen VS<br>Stephen<br>Strauch MA<br>Stroka A | 06.008<br>04.036<br>10.025<br>09.001, 09.041<br>09.107 |
| Souza EB            | 09.049                                                                             | Suarez-Kurtz G                                                | 01.025                                                 |
| Souza EP            | 04.027, 04.095                                                                     | Sucupira PHF                                                  | 04.046                                                 |
| Souza ET            | 04.082, 04.119                                                                     | Sudati JH                                                     | 09.057                                                 |
| Souza FC            | 11.011                                                                             | Sutili FJ                                                     | 09.102                                                 |
| Souza FM            | 09.110                                                                             | Sutti R                                                       | 09.006                                                 |
| Souza GFT           | 04.066                                                                             | Syracuse S                                                    | 05.012                                                 |
| Souza GR            | 05.021, 05.043                                                                     | <b>T</b>                                                      |                                                        |
| Souza HDS           | 10.015, 11.022                                                                     | Taimo MRD                                                     | 01.026, 11.020                                         |
| Souza ICC           | 05.003, 05.011,<br>05.035                                                          | Taiepeiro EF                                                  | 04.003                                                 |
| Souza ILL           | 07.017, 08.008,<br>09.026, 09.030,<br>09.032, 09.035,<br>09.131, 09.140,<br>09.146 | Takahashi RN<br>Takakura AC                                   | 02.052<br>02.037, 02.047,<br>02.051                    |
| Souza LDR           | 10.007                                                                             | Talbot J                                                      | 01.030, 04.070,<br>04.108                              |
| Souza LF            | 02.044                                                                             | Tamascia ML                                                   | 09.145, 09.149                                         |
| Souza LGSS          | 01.010                                                                             | Tanus-Santos JE                                               | 11.009                                                 |
| Souza LM            | 09.051                                                                             | Tatsumi G                                                     | 09.106                                                 |
| Souza MAV           | 09.027, 09.101,<br>09.109                                                          | Tavares BM                                                    | 07.012                                                 |
| Souza MC            | 04.017, 04.018                                                                     | Tavares CF                                                    | 04.105                                                 |
| Souza MHLF          | 01.023, 04.027,<br>04.054, 04.069,<br>04.096, 04.097,<br>07.001, 07.012            | Tavares DC<br>Tavares JF                                      | 10.007<br>07.009, 09.024,<br>09.030, 09.032,<br>09.086 |
| Souza MJ            | 04.031                                                                             | Tavares LD                                                    | 05.014                                                 |
| Souza P H M         | 06.024                                                                             | Tavares LP                                                    | 04.010, 04.022                                         |
| Souza PR            | 04.002                                                                             | Tavares MSH                                                   | 09.001                                                 |
| Souza RB            | 09.078                                                                             | Tavares RL                                                    | 08.008, 09.035                                         |
| Souza ROS           | 01.015, 09.104                                                                     | Tavares-de-Lima W                                             | 04.013, 04.024,<br>04.025                              |
| Souza RPF           | 11.022                                                                             | Tavares-Henriques MS                                          | 09.041, 09.061                                         |
| Souza SP            | 05.046                                                                             | Tavares JF                                                    | 07.015                                                 |
| Souza SS            | 07.002                                                                             | Taylor RN                                                     | 07.013                                                 |
| Souza TFG           | 04.023, 09.132                                                                     | Teixeira AH                                                   | 09.022                                                 |
| Souza VS            | 05.035                                                                             | Teixeira AL                                                   | 04.038                                                 |
| SouzaSS             | 07.015                                                                             | Teixeira C                                                    | 11.007                                                 |
| Spall S             | 09.059                                                                             | Teixeira CFP                                                  | 09.123                                                 |
| Sperotto NDM        | 09.033                                                                             | Teixeira HAP                                                  | 09.075                                                 |
| Spironello RA       | 04.041                                                                             | Teixeira JM                                                   | 04.044                                                 |
| Staurengo-Ferrari L | 05.033, 09.087                                                                     | Teixeira LCR                                                  | 09.105                                                 |
|                     |                                                                                    | Teixeira LF                                                   | 09.111                                                 |



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| Teixeira MA      | 04.015, 04.098  | Torres MCM      | 09.072, 09.135, |
| Teixeira MDA     | 04.023          |                 | 09.148, 10.013, |
| Teixeira MM      | 01.022, 04.001, |                 | 10.023          |
|                  | 04.002, 04.010, | Torres NA       | 09.021          |
|                  | 04.020, 04.022, | Torres ND       | 04.017, 04.018  |
|                  | 04.038, 04.046, | Torres RC       | 04.005          |
|                  | 04.052, 04.055, | Torres TC       | 04.008          |
|                  | 04.064, 04.085, | Torres-Huaco FD | 06.055, 09.065  |
|                  | 04.105, 04.106, | Tostes RC       | 01.029, 06.025  |
|                  | 04.112, 04.123, | Toti F          | 06.003          |
|                  | 05.014          | Touza NA        | 01.013          |
| Teixeira MS      | 09.063          | Toyama MH       | 09.042, 09.072  |
| Teixeira SA      | 04.049, 04.057  | Tozatti MG      | 09.003          |
| Teixeira SC      | 05.030          | Trabulsi V      | 04.081          |
| Teixeira VL      | 09.066          | Travassos RA    | 09.011          |
| Teles AVFF       | 09.058          | Trevisan G      | 05.005, 05.019  |
| Teles FB         | 09.078          | Trevizol F      | 02.003, 02.024  |
| Temp FR          | 02.010          | Trindade S      | 09.137          |
| Tenório EP       | 01.012, 06.035  | Trindade SG     | 04.077          |
| Terra WS         | 10.023          | Troiano JA      | 06.049, 06.061  |
| Terroso T        | 04.119          | Trombetta F     | 02.002          |
| Tesch R          | 01.011          | Tucci P         | 06.052          |
| Tessarolo LD     | 01.021, 09.042  | Tytgat J        | 09.039, 09.053  |
| Texeira Jr E     | 09.073          | <b>U</b>        |                 |
| Thaís Fantozzi E | 04.013          | Uberti A        | 04.031          |
| Thomazzi SM      | 07.019          | Uchoa AV        | 10.022          |
| Thome MP         | 10.020          | Uchoa PN        | 02.057          |
| Tibiriçá E       | 04.017, 04.018, | Uliana DLM      | 02.053          |
|                  | 04.018          | <b>V</b>        |                 |
| Tintino SR       | 02.056, 04.079, | Vago JP         | 04.010, 04.022, |
|                  | 09.119          |                 | 04.055          |
| Tirapelli CR     | 06.004, 06.010, | Val CH          | 04.038          |
|                  | 06.036, 06.038  | Val DR          | 05.029, 05.032, |
| Tomassini TCB    | 05.048          |                 | 05.052, 09.085  |
| Tomaz MA         | 09.041          | Valadão DF      | 04.002          |
| Tomazi L         | 03.005          | Valadares MC    | 09.067          |
| Tomé RBG         | 04.087          | Vale GT         | 11.001          |
| Tonello R        | 05.005          | Vale ML         | 07.012          |
| Tonussi CR       | 05.036          | Valencia JMB    | 09.142          |
| Torres AFC       | 01.021          | Valverde SS     | 05.046          |
| Torres ILS       | 02.032, 04.012, | Vanacôr CN      | 10.010          |
|                  | 04.019, 05.003, | Vargaftig BB    | 04.013          |
|                  | 05.011, 05.035, | Vargas APC      | 09.059          |
|                  | 08.004          | Vargas MD       | 01.001          |
| Torres LMB       | 09.097          |                 |                 |

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| Vasconcellos MC | 01.010                                                                             | Vicentini FTMC      | 04.036                                               |
| Vasconcelos AG  | 05.022                                                                             | Vicentino-Vieira SL | 07.010                                               |
| Vasconcelos ALM | 05.049                                                                             | Vidal AT            | 11.023                                               |
| Vasconcelos AS  | 02.017, 02.040,<br>02.054, 09.103                                                  | Vidal JTB           | 09.142                                               |
| Vasconcelos AV  | 02.036                                                                             | Vidal LMT           | 02.017, 02.036,<br>02.040, 02.054,<br>09.037, 09.038 |
| Vasconcelos CFB | 09.088                                                                             |                     |                                                      |
| Vasconcelos FL  | 05.022                                                                             | Vidal-Diniz AT      | 11.025                                               |
| Vasconcelos IMB | 09.154                                                                             | Vidor L             | 05.003                                               |
| Vasconcelos LF  | 04.068, 05.044,<br>09.037, 09.038                                                  | Vieira ACS          | 04.061, 04.067,<br>05.015                            |
| Vasconcelos LHC | 07.017, 09.030,<br>09.032, 09.086,<br>09.131, 09.134,<br>09.140, 09.146            | Vieira CJAB         | 11.016                                               |
|                 |                                                                                    | Vieira FTA          | 09.056                                               |
|                 |                                                                                    | Vieira IJC          | 10.023                                               |
|                 |                                                                                    | Vieira JCF          | 02.041                                               |
| Vasconcelos MJS | 06.018, 09.023                                                                     | Vieira LV           | 05.029                                               |
| Vasconcelos MS  | 04.023                                                                             | Vieira RP           | 09.005                                               |
| Vasconcelos SMM | 02.031, 09.078,<br>09.150                                                          | Vieira-Júnior GM    | 10.008                                               |
| Vasconcelos WP  | 06.039                                                                             | Vigliano MV         | 04.004, 04.104                                       |
| Vasquez EC      | 06.021                                                                             | Vilar DA            | 09.143                                               |
| Vassalo J       | 04.118                                                                             | Vila-Verde C        | 03.006, 03.008                                       |
| Vaucher RA      | 09.076                                                                             | Vilela FMP          | 04.036                                               |
| Velooso CC      | 05.009                                                                             | Villarreal CF       | 05.048, 05.051                                       |
| Velooso LSM     | 04.104                                                                             | Vinade L            | 02.028                                               |
| Venancio ET     | 07.008, 02.055                                                                     | Violante VD         | 05.027                                               |
| Veras FP        | 04.109                                                                             | Vital MABF          | 02.041, 02.050                                       |
| Veras HRF       | 06.041                                                                             | <b>W</b>            |                                                      |
| Veras RC        | 06.039                                                                             | Waelkens E          | 09.039                                               |
| Vercelino R     | 05.011                                                                             | Wagner C            | 01.008, 09.057                                       |
| Vergara FMF     | 04.051                                                                             | Walter ME           | 11.012                                               |
| Veroneze MH     | 03.004                                                                             | Wanderley AG        | 06.051, 09.068,<br>09.075, 09.088,<br>09.133         |
| Verri WA        | 04.002, 04.036,<br>05.018, 05.020,<br>05.023, 05.028,<br>05.033, 05.034,<br>09.087 | Wanderley CWS       | 04.015, 04.098,<br>09.120                            |
| Viana AFC       | 07.014                                                                             | Watzlawick LF       | 09.002                                               |
| Viana AFSC      | 09.055, 09.103                                                                     | Weiblen C           | 01.005                                               |
| Viana GSB       | 04.090, 04.100,<br>04.114                                                          | Werneck SMC         | 04.105                                               |
|                 |                                                                                    | Werner MF           | 06.043                                               |
| Viana HKMMV     | 02.058                                                                             | Werner MFP          | 05.006, 07.010,<br>09.051                            |
| Viana MDM       | 04.061, 04.067,<br>05.015                                                          | Wiirzler LAM        | 04.045                                               |
| Viana TG        | 03.012                                                                             | Wilke DV            | 09.130, 09.132,<br>10.029                            |
| Vicente MA      | 03.017                                                                             | Wink MR             | 01.031                                               |

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| Wohlenberg MF | 03.009          | Zucolotto SM | 02.012 |
| Wong DVT      | 04.015, 04.039, | Zula A       | 09.053 |
|               | 04.058, 04.098, | Zuliani JP   | 09.111 |
|               | 09.120          |              |        |
| Woolf CJ      | 05.053          |              |        |
| Wuo-Silva R   | 03.003, 03.013  |              |        |

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| Xavier A   | 10.014          |
| Xavier AF  | 04.027, 04.097  |
| Xavier AL  | 09.024, 10.028, |
|            | 11.006          |
| Xavier B   | 11.012          |
| Xavier F   | 05.011          |
| Ximenes RM | 09.072, 09.151  |

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| Yamasawa RH  | 11.016         |
| Yeh K        | 09.148         |
| Yekkirala AS | 05.053         |
| Yokoyama TS  | 03.003, 03.013 |
| Yoneyama KAG | 09.016, 09.074 |

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| Zaghi GGD     | 02.020, 02.034  |
| Zambelli VO   | 05.037, 09.044  |
| Zamboni DS    | 01.024, 01.030, |
|               | 05.025          |
| Zaminelli T   | 02.050          |
| Zampronio AR  | 04.093          |
| Zamuner SF    | 09.005, 09.029, |
|               | 09.123          |
| Zamuner SR    | 04.072, 04.074, |
|               | 04.089, 09.005, |
|               | 09.029, 09.123  |
| Zanette SA    | 05.011          |
| Zangrossi HJr | 03.017          |
| Zanoveli JM   | 02.041          |
| Zarpelon AC   | 04.036, 05.023, |
|               | 05.028, 05.033, |
|               | 05.034          |
| Zerbini LF    | 10.016          |
| Zidar N       | 09.053          |
| Zochio GP     | 04.003          |
| Zuardi AW     | 03.007          |
| Zuchi FC      | 06.020          |