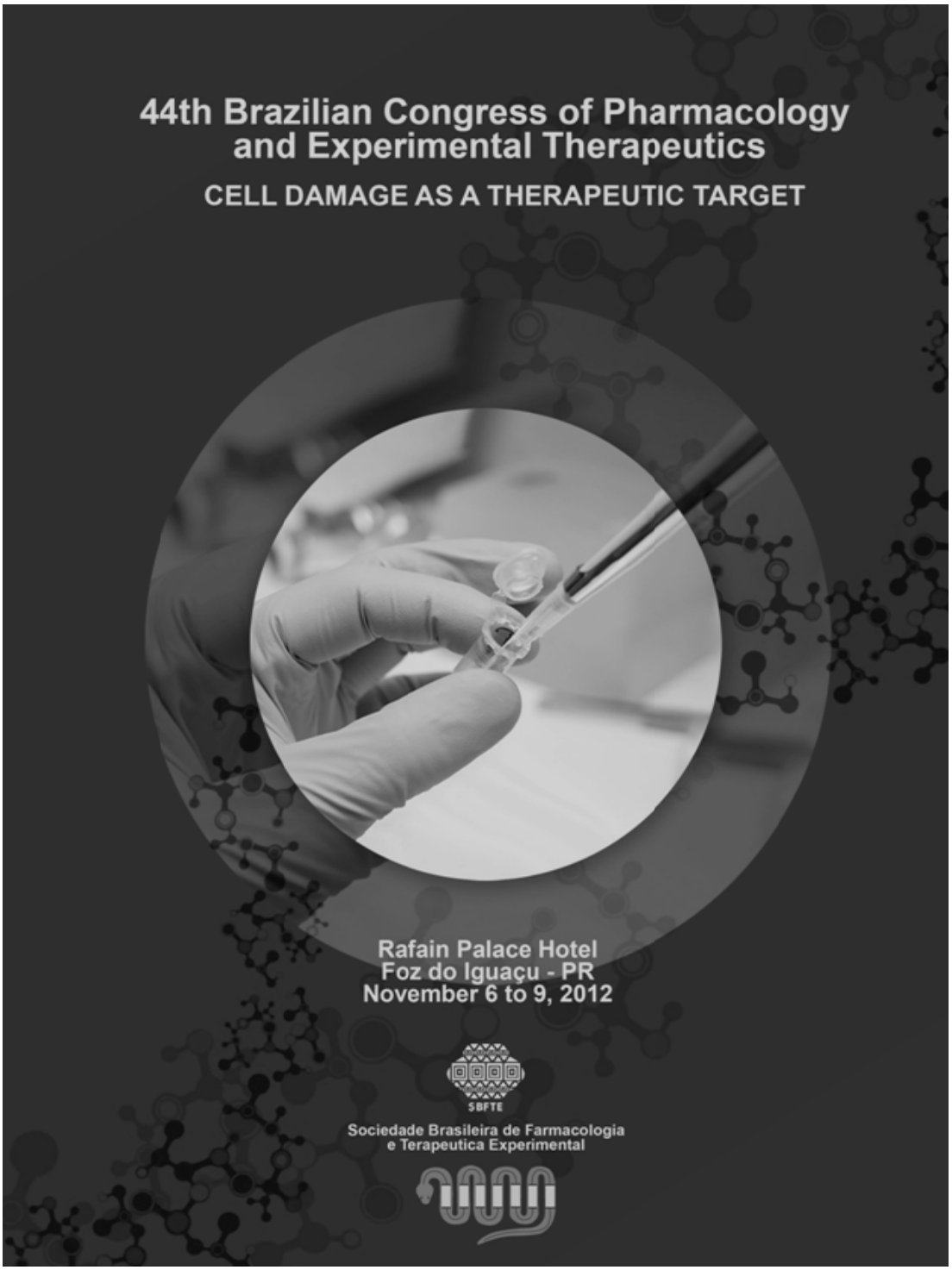

PROGRAM

Convention Center Rafain Palace Hotel
Foz do Iguaçu
November 06 – 09, 2012

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CNPq Conselho Nacional de Desenvolvimento Científico e Tecnológico

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

Message from the President

Dear Colleague,

On behalf of the Brazilian Society of Pharmacology and Experimental Therapeutics I welcome you to our annual meeting. This meeting is the result of a year of hard work by the Board of Directors, by the Council, Executive Secretariat and Eventus. We have made our very best to create an interesting and attractive meeting and do hope that you will enjoy the science and beautiful natural environment of Foz do Iguacu. 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 who supports the *José Ribeiro do Valle Award* and Atem & Remer who supports the *Innovation Award*.

Finally, I thank very much to the Abstract and Poster reviewers who have spent a considerable time and effort to ensure that our standards are met. An event this size is likely to have some imperfections and many things can indeed get better. In this regard, we very much appreciate your feedback, comments and suggestions to the email sbfte@sbfte.org.br.

I wish you an excellent Congress and a very nice stay in Foz do Iguaçu. Take your time to meet old and new friends.

My best regards,

Mauro M. Teixeira
President of the Congress

Congress President	Mauro M. Teixeira (UFMG)	**Scientific Committee**	Cristóforo Scavone (USP) Fernando de Queiroz Cunha (USP) Letícia Veras Costa Lotufo (UFC) Lusiane M. Bendhack (USP) Mauro M. Teixeira (UFMG, coordinator)
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Useful information

Secretariat
Congress Secretariat will be open from 8 am to 6 pm. A board for messages, changes in the Program, etc will be available

Posters
Posters Sessions will happen on November 7 and 8 from 19h30 to 21h00 and November 9 from 10h30 to 12h15. Please display your poster from 08h00 at the day of your presentation and take it out after your presentation.

Certificates
Conferences, *symposia and oral presentation*: at room at the end of the lecture
Posters: after presentation.
Courses: at room in the last day. A minimum of two classes

Media Desk
Media desk will be open from 8 am to 6 pm. 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

Tuesday – November 06, 2012

Schedule	
09h00-12h00	Meeting of the Deliberative Council (only for Members of the Council and Society Board)
13h30-16h30	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	Opening ceremony
18h30-19h30	*Rocha e Silva Memorial Lecture* **Discovery of nitric oxide and cyclic GMP in cell signaling and their role in drug development** Ferid Murad (Nobel Prize Laureate, George Washington University, USA) Sponsor BIOLAB Chairperson: Gilberto de Nucci (UNICAMP)
20h00-22h00	Cocktail

09h00-12h00 Meeting of the Deliberative Council (only for Members of the Council and Society Board)

13h30-16h30 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 Opening ceremony

18h30-19h30 *Rocha e Silva Memorial Lecture*
Discovery of nitric oxide and cyclic GMP in cell signaling and their role in drug development
Ferid Murad (Nobel Prize Laureate, George Washington University, USA)
Sponsor BIOLAB
Chairperson: Gilberto de Nucci (UNICAMP)

20h00-22h00 Cocktail

Schematic Scientific Program

Wednesday – November 07, 2012

Schedule	Room A	Room B	Room C
08h00-09h00	Course: (Class 1) Rational development of drugs	Course: (Class 1) Schizophrenia: molecular targets and experimental models	Course: (Class 1) Use of animals in research: Use principles, model development, euthanasia and anesthesia
09h00-10h00		Conference: Free radicals and defense against intracellular parasites	
10h00-10h30	Coffee break		
10h30-12h30	Symposium: Cell damage in sepsis and sterile inflammation	Symposium: Caveolae and lipid rafts as signaling targets	Symposium: Cell damage in cancer: Target for new drug development
12h30-15h00	Lunch		
15h00-16h00		Conference: Capturing affective dimensions of pain preclinically to speed translation	
16h00-17h00	Coordinated session: Cell dysfunction and nitric oxide in the cardiovascular system	Coordinated session: Oxidative stress as a mediator of cardiovascular dysfunction	Coordinated session: Inflammation
17h00-17h30	Coffee break		
17h30-19h30	Symposium: Innovation: Advances in the university-pharmaceutical industry interaction. What we have learned. Which is the vision of the future?	Symposium: New therapeutical strategies for chronic lung diseases	Symposium: Non-canonical signaling and biased agonism in 7 transmembrane domain receptors
19h30-21h00	Poster Session 1		
21h00-22h30	SBFTE General Assembly		

08h00-09h00 Courses

Room A

Rational Development of drugs
Chairperson: Rafaela Salgado Ferreira (UFMG)

- *Class 1*: *Basic concepts on rational planning of drugs*
  Rafaela Salgado Ferreira (UFMG)

Room B

Schizophrenia: **Molecular targets and experimental models**
Chairperson: François G. Noël (UFRJ) / Stela Maris Kuze Rates (UFRGS)

- *Class 1*: *Etiology and treatment*: *hypotheses and molecular targets*
  François G. Noël (UFRJ)

Room C

Use of animals in research: **Use principles**, **model development**, **euthanasia and anesthesia**
Chairperson: Paulo de Assis Melo (UFRJ)

Class 1: *Why do we use animals in research*? *Ethics Committees*: *National and International Legislation*
Marcelo M. Morales (UFRJ)

09h00-10h00 Conference

Room B

Free radicals and defense against intracellular parasites
Leda Quercia Vieira (UFMG)

10h00-10h30 Coffee break

10h30-12h30 Symposia

Room A

Cell damage in sepsis and sterile inflammation:
Chairperson: Jamil Assreuy (UFSC)

- *Intracellular smooth muscle proteolysis in sepsis-induced vascular hypocontractility*
  Richard Schulz (University of Alberta, Canada),
- *Triggering cell activation in sepsis vascular dysfunction*
  Jamil Assreuy (UFSC)
- *Paralysis of immune system associates with sepsis outcome*
  Fernando de Queiroz Cunha (USP)
- *Collaboration between mitochondrial products and chemokines to injury amplification during sterile inflammation*
  Gustavo Batista de Menezes (UFMG)

Room B

Caveolae and lipid rafts as signaling targets
Chairperson: Lusiane M. Bendhack (USP)

- *Mechanisms of oxidative stress-induced endothelial cell reprogramming*
  Richard D. Minshall (University of Illinois, USA),
- *The pharmacodynamics of purinoceptors depends on lipid raft membrane micro regionalization*?
  Juan Pablo Huidobro-Toro (PUC, Chile)
- *Caveolar Na/K-ATPase*: *From ion pumping to signaling transduction*
  Luis Eduardo Menezes Quintas (UFRJ)

Room C

Cell damage in cancer: **target for new drug development**
Chairperson: Ronaldo A. Ribeiro (UFC)

- *Challenges and perspectives in the development of new anticancer agents in Brazil*
  Letícia Veras Costa Lotufo (UFC)
- *Esophageal cancer methylome reveals potential biomarkers and the interaction between IL6 and BCl3 for esophageal cancer development*
  Luis Felipe Ribeiro Pinto (INCA)
- *Pathogenesis of gastrointestinal toxicities of irinotecan-based cancer chemotherapy*: *an opportunity to the development of cytoprotective agent*
  Roberto Cesar Pereira Lima Júnior (UFC)

12h30-15h00 Lunch

15h00-16h00 Conference

Room B

Capturing affective dimensions of pain preclinically to speed translation
Frank Porreca (University of Arizona, USA)
Chairperson: Giles A. Rae (UFSC)

16h00-17h00 Coordinated sessions

Room A

Cell dysfunction and nitric oxide in the cardiovascular system
Chairperson: Luciana Venturini Rossoni (USP)

Tathiany Torres

- **06.024 Kinin B1 receptor modulates L-arginine uptake and nitric oxide generation in endothelial cells**. Torres TC, Tudela RC, Loiola RA, Freitas JAM, Assunção NA, Pesquero JB, Fernandes L Unifesp

Muryel Carvalho Gonçalves

- **06.026 Long-lasting effect of nitric oxide on platelet aggregation**. Gonçalves MC, Assreuy J UFSC – Farmacologia

Fabíola Fialho Furtado

- **06.057 NTHF**: **An organic nitrate with cardiovascular action without tolerance induction**. Furtado FF[1], Veras RC[2], Silva TAF[2], Queiroz TM[3], Alustau MC[3], Machado NT[3], Oliveira-Filho A A[3], Santos AF[3], Athayde-Filho PF[3], Medeiros IA[2] [1]CFP-ETSC-UFCG, [2]DCF-CCS-UFPB, [3]CCS-UFPB

Marcondes Alves Barbosa da Silva

- **06.058 Vascular effects of spironolactone in an experimental model of type 2 diabetes mellitus**. Silva MAB[1], Cau SBA[1], Lopes RAM[1], Bruder-Nascimento T[1], Manzato CP[1], Touys RM[2], Tostes RC[1] [1]FMRP-USP – Pharmacology, [2]ICAMS-University of Glasgow

Room B

Oxidative stress as a mediator of cardiovascular dysfunction
Chairperson: Carlos Renato Tirapelli (USP)

Mariana Cirillo Diniz

- **06.018 The role of oxidative stress and inflammation during nitrate tolerance induced by sodium nitroprusside**. Diniz MC[1], Olivon VC[2], Tavares LD[3], Santos RAS[2], Souza DG[3], Bonaventura D[1] [1]UFMG – Pharmacology, [2]UFMG – Physiology and Biophysics, [3]UFMG – Microbiology

Nadia Alice Vieira da Motta

- **06.030 Cyclic nucleotide modulators reduce vasoconstrictor**, **oxidative and inflammatory profile in Wistar rats fed hypercholesterolaemic diet**. Motta NAV[1], Fumian MM[1], Castro J[1], Miranda ALP[2], Kümmerle AE[3], Barreiro EJ[2], Brito FCF[1] [1]UFF – Farmacologia Experimental, [2]UFRJ – Avaliação e Síntese de Substâncias Bioativas, [3]UFRRJ – Química

Priscila de Souza

- **06.034 Enhanced aorta reactivity after sepsis**: **involvement of RHO kinase pathway**, **calcium sensitization and oxidative stress**. de Souza P[1], da Silva LM[1], Marques MCA[1], da Silva-Santos JE[2] [1]UFPR – Farmacologia, [2]UFSC – Farmacologia

Fábio Henrique da Silva

- **06.037 The NADPH oxidase inhibitor apocynin ameliorates the erectile dysfunction in middle-aged rats**. Silva FH[1], Bau FR[1], Brugnerotto AF[2], Mónica FZT[1], Priviero FBM[1], Toque HA[1], Antunes E[1] [1]UNICAMP – Farmacologia, [2]UNICAMP – Hematologia e Hemoterapia

Room C

Inflammation
Chairperson: Vanessa Pinho da Silva (UFMG)

Pedro Elias Marques Pereira Silva

- **04.012 Chemokines and mitochondrial products activate neutrophils to amplify organ injury during mouse acute liver failure**. Marques P[E1], Amaral S[S1], Pires D[A1], Nogueira L[L1], Oliveira A[G1], Soriani F[M2], Teixeira M[M3], Menezes G[B1] [1]UFMG – Morfologia, [2]UFMG – Genética, [3]UFMG – Bioquímica e Imunologia

Paula Giselle Czaikoski

- **04.024 Neutrophil extracellular traps contribute to organ dysfunction during endotoxic shock and sepsis**. Czaikoski PG[1], Nascimento DCB[2], Sônego F[1], Castanheira FV[1], Souto FO[2], Sousa RB, Abreu M[3], Alves-Filho JF[1], Cunha FQ[1] [1]FMRP-USP – Pharmacology, [2]FMRP-USP – Immunology, [3]FMRP-USP – Pathology

Camila Ribeiro Rodrigues de Pão

- **04.078 Lack of effect on MAP kinase phosphatase-1 expression underlies dexamethasone refractoriness in a murine model of asthma** Pão CRR[1], Serra MF[1], Cotias AC[1], Daleprane JB[1], Jurgilas PB[1], Couto GC[1], Anjos-Valotta EA[1], Cordeiro RSB[1], Silva PMR[1], Martins MA[1] [1]Fiocruz – Fisiologia e Farmacodinâmica

Raquel Duque do Nascimento Arifa

- **04.080 Reactive oxygen species-dependent inflammasome activation mediates irinotecan-induced mucositis through the control of IL-1B and IL-18 release**. Arifa RDN[1], Madeira MFM[1], De Paula TP[1], De lima RL[1], Fagundes CT[1], Tavares LD[1], Rachid MA[2], Riffel B[3], Teixeira MM[4], Souza DG[1] [1]UFMG – Microbiologia, [2]UFMG – Patologia, [3]Université d´Orleans / CNRS, [4]UFMG – Imunofarmacologia

17h00-17h30 Coffee break

17h30-19h30 Symposia

Room A

Innovation: **Advances in the university-pharmaceutical industry interaction**. **What we have learned**. **Which is the vision of the future**? Sponsored by Biolab Sanus Farmacêutica
Chairperson: Roberto Nicolsky (PROTEC / IPD-Farma)

- *The Industry vision*
  Dante Alario Junior (Biolab Sanus Farmacêutica)
- *The University vision*
  José Fernando Perez (ABC / TWAS Recepta Biopharma)
- *The Financial Agencies vision*
  Hernan Chaimovich (USP / ABC/ FAPESP)
- *Present and perspectives of the national pharmaceutical industry*
  Roberto Nicolsky (PROTEC / IPD-Farma)

Room B

New therapeutical strategies for chronic lung diseases

Chairperson: Patrícia M. Rodrigues e Silva (Fiocruz)

- *Gas6/TAM signaling differentially modulates chronic fungal asthma with the expansion of myeloid regulatory cell subsets*
  Cory Hogaboam (University of Michigan, USA)
- *Role of nitric oxide and RHO-kinase inhibitors in chronic lung diseases*
  Iolanda de Fátima Lopes Calvo Tibério (USP)
- Search for new therapies against silicosis
  Patrícia M. Rodrigues e Silva (Fiocruz)
- *Chemokine system*: *key regulators of pulmonary inflammation and fibrosis induced by bleomycin in mice*
  Remo Castro Russo (UFMG)

Room C

Non-canonical signaling and biased agonism in 7 transmembrane domain receptors

Chairperson: Andre S. Pupo (Unesp-Botucatu)

- *Biased agonism in alpha-1 adrenergic receptor subtypes*
  André S. Pupo (Unesp-Botucatu)
- *Biased agonism and non-canonical functions of peptidergic GPCRs*
  Cláudio Miguel da Costa Neto (USP)
- *Structural insights into agonist-induced activation of G-protein-coupled receptors*
  Xavier Deupi (Paul Scherrer Institut, Switzerland),
- *Biased inverse agonism at histamine H1 and H2 receptors. Evidence for an intracellular G-protein kidnapper.*
  Federico Monczor (University of Buenos Aires, Argentina)

19h30-21h00 **Poster Session 1**

01. Cellular and Molecular Pharmacology (01.001-01.016)
02. Neuropharmacology (02.001-02.015)
03. Psychopharmacology (03.001-03.011)
04. Inflammation (04.001-04.031)
05. Pain and Nociception (05.001-05.022)
06. Cardiovascular and Renal Pharmacology (06.001-06.026)
07. Endocrine and Gastrointestinal (07.001-07.010)
09. Natural Products and Toxinology (09.001-09.040)
10. Cancer and Cell Proliferation (10.001-10.012)

21h00-22h30

Room B

SBFTE General Assembly

Schematic Scientific Program

Thursday – November 08, 2012

Schedule	Room A	Room B	Room C
08h00-09h00	Course: (Class 2) Rational Development of drugs	Course: (Class 2) Schizophrenia: molecular targets and experimental models	Course: (Class 2) Use of Animals in Research: Use Principles, Model Development, Euthanasia and Anesthesia
09h00-10h00		Conference: Epigenetics and Neurogenesis as new tools in personalized pharmacology	
10h00-10h30	Coffee break		
10h30-12h30	José Ribeiro do Valle Award	Symposium: Serotonin: New vista to an old neurotransmitter	Symposium: Acute pancreatitis, understanding the cellular damage to developing new therapies
12h30-15h00	Lunch		
15h00-16h00		Conference: The manuscript section process at Science	
16h00-17h00	Coordinated session: Inflammation/Pain	Coordinated session: Drug discovery/Natural products	Coordinated session: Cellular Signaling
17h00-17h30	Coffee break		
17h30-19h30	Symposia: Obesity, diabetes and inflammation	Symposia: Cell damage as a therapeutic target in epilepsy and Parkinson´s disease	Symposia: Exploring new molecular mechanism on pain development
19h30-21h00	Poster Session 2		

08h00-09h00 Courses

Room A

Rational Development of drugs
Chairperson: Rafaela Salgado Ferreira (UFMG)

- *Class 2*: Examples of drug development from rational planning
  Rafaela Salgado Ferreira (UFMG)

Room B

Schizophrenia: **molecular targets and experimental models**
Chairperson: François G. Noël (UFRJ) e Stela Maris Kuze Rates (UFRGS)

- Class 2: *Animal models for the study of antipsychotics*
  Stela Maris Kuze Rates (UFRGS)

Room C

Use of animals in research: **Use principles**, **model development**, **euthanasia and anesthesia**
Chairperson: Paulo de Assis Melo (UFRJ)

- Class 2: *Animal models developed*: *from genetic engineering to models*
  Marcel Frajblat (UFRJ)

09h00-10:00 Conference

Room B

Epigenetics and neurogenesis as new tools in personalized pharmacology
Harry Steinbusch (Maastricht University, The Netherlands)
Chairperson: Elaine Del Bel (USP)/

10h00-10h30 Coffee break

10h30-12h30 Symposia

Room A

José Ribeiro do Valle Award
Chairperson: Mauro M. Teixeira (UFMG)

Juliana Akinaga

- **01.004 Agonist driven α1A-adrenoceptor phosphorylation**, **desensitization and internalization**: **Differential recruitment of PKCα and GRK2.** Akinaga J[1], Alcántara-Hernández R[2], García-Sáinz JA[2], Pupo AS[1] [1]Unesp-Botucatu – Farmacologia, [2]UNAM – Fisiologia Celular

Isabel D. Machado

- **01.029 Participation of cytosolic glucocorticoid receptor and Annexin-A1 on neutrophil traffic from bone marrow into blood**: **Adhesion molecule expression and SDF-1alpha/CXCR4 axis**. Machado ID[1], Santin JR[1], Ferraz-de-Paula V[1], Perretti M[2], Farsky SHP[1] [1]USP – Pharmaceutics Science, [2]William Harvey Institute – Immunopharmacology

Maíra Assunção Bicca

- **02.004 The role of kinin B2 receptor on amyloid-ß– induced neuroinflammation in vivo**: **Evidence for the modulation of PKC and MAPK pathways.** Bicca MA, Loch-Neckel G, Figueiredo CP, Costa R, Calixto JB UFSC – Farmacologia

Karin Scheschowitsch

- **04.028 Nitric oxide and peroxynitrite as signaling agents for NOS-2 expression in vascular smooth muscle cells**. Scheschowitsch K[1], Sordi R[1], Moraes JA[2], Barja-Fidalgo TC[2], Assreuy J[1] [1]UFSC – Pharmacology, [2]UERJ – Pharmacology

Jhimmy Talbot

- **04.053 Role of CCR2 in neutrophil articular infiltration in arthritis.** Talbot J[1], Bianchini FJ[,], Souto FOS[2], Nascimento DCB[1], Pinto LG[1], Peres RS[2], Oliveira RD[3], Almeida SL[3], Silva JR[2], Ferreira SH[1], Louzada-Junior P[3], Cunha TM[1], Cunha FQ[1], Alves-Filho JC[1] [1]FMRP-USP – Farmacologia, [2]FMRP-USP – Imunologia, [3]HC-FMRP-USP – Clínica Médica

Room B

Serotonin: **new vista to an old neurotransmitter**
Chairperson: Elaine Del Bel (USP) / Francisco Silveira Guimarães (USP)

- *Somatic exocytosis of serotonin*
  Francisco Fernandez de Miguel (UNAM, Mexico)
- *5-HT and mechanisms of defense in animals*
  Frederico G. Graeff (USP)
- *Morphological basis of neural plasticity in normal animals and animals with neurodegenerative and neuroinflammatory diseases. Possible mechanistic interrelationships between depression – Alzheimer disease*
  Harry Steinbusch (Maastricht University, The Netherlands)
- *5-HT and mechanisms of defense in humans*
  Bill Deakin (University of Manchester, UK)

Room C

Acute pancreatitis, **understanding the cellular damage to developing new therapies**
Chairperson: Marcellus H. L. Ponte de Souza (UFC)

- *Calcium and reactive oxygen species in acute pancreatitis*: *friend or foe*?
  David N Criddle (University of Liverpool, UK)

- *Inhibition of leukocyte adhesion by fucoidin prevents the severe acute pancreatitis in mice*
  Marcellus H. L. Ponte de Souza (UFC)
- *Distinct roles of the neuropeptide substance P and nitric oxide in secretory phospholipase A2-induced pancreatitis*
  Soraia K. P. Costa (USP)

12h30-15h00 Lunch

15h00-16h00 Conference

Room B

The manuscript section process at *Science*
Peter Stern (Science, UK)
Chairperson: Francisco Silveira Guimarães (USP)

16h00-17h00 Coordinated sessions

Room A

Inflammation/Pain
Chairperson: Thiago Mattar Cunha (USP)

Rafael Cypriano Dutra

- **05.006 Euphol**, **a tetracyclic triterpene produces antinociceptive effects in inflammatory and neuropathic pain**: **the involvement of cannabinoid system**. Dutra RC[1], Silva KABS[1], Bento AF[1], Marcon R[1], Paszcuk AF[1], Meotti FC[1], Pianowski LF[2], Calixto JB[1] [1]UFSC – Farmacologia, , [2]Pianowski & Pianowski Ltda

Cleverton Kleiton Freitas de Lima

- **05.050 LASSBio-1135**: **a multi-target compound**, **orally effective in a model of neuropathic pain**, **acts as a TRPV1 antagonist**, **TRPA1 agonist and also reduces cytokine production**. Lima CKF[1], Yekkirala AS[2], Sprague JM[2], Lacerda RB[1], Barreiro EJ[1], Fraga CAM[1], Cunha TM[3], Woolf CJ[2], Miranda ALP[1] [1]ICB-UFRJ – Desenvolvimento de Fármacos, [2]Harvard Medical School – Neurobiology, [3] FMRP-USP – Farmacologia

Sérgio José Macedo Júnior

- **05.054 Antinociceptive effect of inosine involves direct interaction with adenosine A1 receptors**. Macedo-Junior SJ[1], Nascimento FP[1], Luiz-Cerutti M[2], Borges FR[2], Córdova MM[2], Dutra R[1], Pamplona FA[1], Constantino L[3], Tasca CI[3], Reid A[4], Sawynok J[4,4], Calixto JB[1], Santos ARS[2] [1]UFSC – Farmacologia, [2]UFSC – Ciências Fisiológicas, [3]UFSC – Bioquímica, [4]Dalhousie University – Pharmacology

Larissa Garcia Pinto

- **05.061 Nonpeptidergic C fibers mediates inflammatory hypernociception in mice** Pinto LG, Souza GR, Lopes AHP, Talbot J, Santos MD, Cunha FQ, Cunha TM, Ferreira SH FMRP-USP – Farmacologia

Room B

Drug discovery/Natural products
Chairperson: Letícia Veras Costa Lotufo (UFC)

Rodrigo Braccini Madeira da Silva

- **09.036 Toxins from the spider *Phoneutria nigriventer* inhibit nociceptive and inflammatory responses in the mouse model of hemorrhagic cystitis induced by cyclophosphamide**. Silva RBM[1], Sperotto NDM[2], de Souza AH[3], Gomez MV[3], Morrone FB[4], Campos MM[1] [1]PUCRS – Medicina e Ciências da Saúde / Toxicologia e Farmacologia, [2]PUCRS – Farmácia, [3]UFMG – Neurociências, [4]PUCRS – Biologia Celular e Molecular – Farmacologia Aplicada

Ariadne Duarte Braga

- **09.051 Proteolytic fraction from *Vasconcelle acundinamarcensis* latex shows antitumoral effect and alters leukocytes properties in an inflammatory tumor microenvironment**. Braga AD[1], Santos VG[1], Oliveira-Lima OC[2], Marques SM[2], Salas CE[3], Andrade SP[2], Carvalho-Tavares J[2], Lopes MTP[1] [1]UFMG – Farmacologia, [2]UFMG – Fisiologia e Biofísica, [3]UFMG – Bioquímica e Imunologia

Rangel Leal Silva

- **09.048 Isobrucein B**, **A quassinoid from *Picrolemma sprucei* Hook**. **f**., **reduces the release of proinflammatory cytokines and nitric oxide from mouse macrophages**: **possible effect by inhibition of NF-kB activation**. Silva RL[1], França RFO[1], Lopes AH[1], Vieira SM[2], Amorim RCN[3], Cunha FQ[1], Pohlit AM[3], Cunha TM[1] [1]FMRP-USP – Pharmacology, [2]INPA – Health Sciences, [3]INPA – Natural Products

Mônica Moura de Almeida

- **PT.09.096 Role of TRPM8 channels in the vasorelaxant effect induced by rotundifolone in the superior mesenteric artery from spontaneously hypertensive rats**. Almeida MM[1], Lira DP[2], Barbosa filho JM[2], Gomes MA[3], Pesquero JL[4], Cruz JS[5], SILVA DF[6], Medeiros IA[1] [1]UFPB – Ciências Farmacêuticas, [2]UFPB – Química, [3]UFMG- Departamento de Parasitologia, [4]UFMG – Fisiologia e Biofísica, [5]UFMG – Bioquímica e Imunologia, [6]UFBA – Biorregulação

Room C

Cellular Signaling
Chairperson: Rosely O. Godinho (Unifesp)

Luigi Marins Berretta

- **01.001 Tachyphylaxis to serotonin in the rat corpora cavernosa**. Berretta LM, Linder AE UFSC – Pharmacology

Vanessa Lima

- **01.020 Quantifying ligand bias signaling at human αlpha1A- and αlpha1b-adrenoceptors**. Lima V, Pupo AS Unesp – Farmacologia

Renan Paulo Martin

- **01.023 Molecular dynamics of angiotensin AT1 receptor**: **the effect of site-directed C18S mutation**. Martin RP, Rodrigues ES, Silva RF, Oliveira L, Shimuta SI Unifesp – Biofísica

Jessica Barbosa do Nascimento Viana

- **01.027 Pharmacologic evaluation of new alpha-1 adrenoceptor and 5-HT1A antagonists**. Nascimento Viana JB[1], Carvalho AR[1], Romeiro LAS[2], Nascente LC[3], Lemes LFN[3], Nöel FG[1], Silva CLM[1] [1]UFRJ – Farmacologia Bioquímica e Molecular, [2]LADETER-UnB, [3]LADETER-UCB

17h00-17h30 Coffee break

17h30-19h30 Symposia

Room A

Obesity, diabetes, reproduction and immunity

Chairperson: Thereza Christina Barja-Fidalgo (UERJ)

- *Innate immunity and obesity*: *the role of MYD88*
  Niels Olsen Saraiva Câmara
- *Characterization of gene expression in CD14^{+}CD16^{-}, CD14^{+}CD16^{+} and CD14^{dim}CD16^{++} monocyte subsets in obesity*
  Mariana Renovato Martins (UERJ)
- *Antimicrobial proteins as targets for male contraception*
  Erick José Ramo da Silva (Unifesp)
- *Involvement of inflammatory mediators in the metabolic homeostasis*
  Adaliene Versiani Matos Ferreira (UFMG)

Room B

Cell damage as a therapeutic target in epilepsy and Parkinson´s disease

Chairperson: Rui D. Prediger (UFSC)

- *Novel adenosine-based therapeutic strategies to manage brain dysfunction and damage upon epilepsy*
  Rodrigo A. Cunha (University of Coimbra, Portugal)
- Neuroprotective strategies to manage non-motor symptoms in Parkinson's disease
  Rui Daniel S. Prediger (UFSC)
- Parkin knockout mice model early preclinical phase of Parkinson's disease
  Rita Raisman Vozari (Université Pierre et Marie Curie, France)

Room C

Exploring new molecular mechanism on pain development

Chairperson: Thiago M. Cunha (USP)

- *Mediators of leukocyte recruitment and pain in gout arthritis*
  Flavio Almeida Amaral (UFMG)
- *TRPA1 as a therapeutic target for pain*
  Juliano Ferreira (UFSM)
- *Role of IL-33/ST2 signaling on the genesis of neuropathic pain*
  Waldiceu A. Verri Jr (UEL)
- *Development of novel NaV1.8 channel blocker for pain control*, *is it possible*?
  Rodolfo do Couto Maia (UFRJ)

19h30-21h00 Poster Session 2

01. Cellular and Molecular Pharmacology (01.017-01.033)
02. Neuropharmacology (02.016-02.030)
03. Psychopharmacology (03.012-03.023)
04. Inflammation (04.032-04.060)
05. Pain and Nociception (05.023-05.044)
06. Cardiovascular and Renal Pharmacology (06.027-06.052)
08. Respiratory, Urinary and Reproductive (08.001-08.012)
09. Natural Products and Toxinology (09.041-09.079)
11. Clinical Pharmacology, Pharmacokinetics, Pharmacogenomics and Preclinical Toxicology (11.001-11.008)

Schematic Scientific Program

Friday – November 09, 2012

Schedule	Sala A	Sala B	Sala C
08h00-09h00	Course (Class 3) Rational Development of drugs.	Course (Class 3) Schizophrenia: molecular targets and experimental models	Course (Class 3) Use of Animals in Research: Use Principles, Model Development, Euthanasia and Anesthesia
09h00-10h00		Conference: Increasing protein O-GlcNAcylation: A new paradigm for ischemic cardioprotection	
10h30-12h15	Poster Session 3 Coffee break		
12h30-13h30	Closing Lecture Development of crotalphine for the treatment of pain: challenges and approaches Yara Cury (IBu)		
13h30-14h00	Closing Session Awards		

08h00-09h00 Courses

Room A

Rational development of drugs
Chairperson: Rafaela Salgado Ferreira (UFMG)

- *Class 3*: *Strategies of rational planning of drugs*
  Rafaela Salgado Ferreira (UFMG)

Room B

Schizophrenia: **Molecular targets and experimental models**
Chairperson: François G. Noël (UFRJ) e Stela Maris Kuze Rates (UFRGS)

- Class 3: *New pharmacological targets of treatment*
  Gilda Angela Neves (UFRJ)

Room C

Use of animals in research: **Use principles**, **model development**, **euthanasia and anesthesia**
Chairperson: Paulo de Assis Melo (UFRJ)

- Class 3: *The care in handling*, *anesthesia*, *analgesia and euthanasia procedures*
  Paulo de Assis Melo (UFRJ)

09h00-10h00 Conference

Room B **Increasing protein O-GlcNAcylation**: **A new paradigm for ischemic cardioprotection**
John C. Chatham (University of Alabama, USA)
Chairperson: Rita C. Tostes

10h30-12h15 **Poster Session 3** with coffee break

01. Cellular and Molecular Pharmacology (01.034-01.050)
02. Neuropharmacology (02.031-02.044)
04. Inflammation (04.061-04.088)
05. Pain and Nociception (05.045-05.066)
06. Cardiovascular and Renal Pharmacology (06.053-06.078)
07. Endocrine and Gastrointestinal Pharmacology (07.011-07.020)
09. Natural Products and Toxinology (09.080-09.120)
10. Cancer and Cell Proliferation (10.013-10.023)
11. Clinical Pharmacology, Pharmacokinetics, Pharmacogenomics and Preclinica Toxicology (11.009-11.017)

12h30-13h30 Closing Lecture
Development of crotalphine for the treatment of pain: **challenges and approaches**
Yara Cury (IBu)

13h30-14h00 Closing Session

Awards

Poster Session 1 – Wednesday 07/11/2012

01. Cellular and Molecular Pharmacology

01.001 **Tachyphylaxis to serotonin in the rat corpora cavernosa**. Berretta LM, Linder AE UFSC – Pharmacology

01.002 **Vasodilatation induced by forskolin involves cyclic GMP production**. Neto MA[1], Lunardi CN[2], Rodrigues GJ[3], Bendhack LM[4] [1]UNINGÁ – Farmacologia, [2]UnB – Química, [3]FMRP-USP – Farmacologia, [4]FCFRP-USP – Química e Física

01.003 **Oxidative modifications in chronological aging and treatment with vitamin E**. Costa ACC, Silva TNX, Souza-Neto FP, Terra VA, Bernardes SS, Cecchini R, Cecchini AL UEL

01.004 **Agonist driven α1A-adrenoceptor phosphorylation**, **desensitization and internalization**: **Differential recruitment of PKCα and GRK2**. Akinaga J[1], Alcántara-Hernández R[2], García-Sáinz JA[2], Pupo AS[1] [1]Unesp-Botucatu – Farmacologia, [2]UNAM – Fisiologia Celular

01.005 **Evaluation of the intrinsic efficacy of different ligands of the 5-HT1A receptor**. Pompeu TET, Moura BC, Drummond C, Nöel FG ICB-UFRJ – Farmacologia e Química Medicinal

01.006 **Influence of glycation on the biotransformation enzyme glutathione S-transferase**. Bousová I, Trnková L, Průchová Z, Drsata J Charles University in Prague-Pharmacy – Biochemical Sciences

01.007 ***In vitro* tolerance to nitroglycerin following 5 minutes incubation is followed by an increased reactive oxygen species in isolated endothelial cell**. de Rezende V, Silva BR, Bendhack LM. FCFRP-USP – Física e Química

01.008 **Consequences of chronic ethanol consumption on the reactivity and expression of components of the endothelinergic system in the rat corpus cavernosum**. Leite LN[1], Côco H[1], Lacchini R[1], Tanus-Santos JE[1], Carnio EC[2], De Oliveira AM[3], Tirapelli CR[2] [1]FMRP-USP, [2]EERP-USP, [3]FCFRP-USP

01.009 **Establishment of an animal model to evaluate the healing of wounds**. Angeli-Gamba T[1], Santos JMP[1], Silva-Jesus AC[1], Machado DE[1], Nasciutti LE[2], Soares de Moura R[1], Perini JA[1] [1]UEZO, [2]UFRJ

01.010 **Cardiotonic steroids exhibit functional selectivity in LLC-PK1 cells**. Amaral LS, Cunha-Filho GA, Nöel FG, Quintas LEM ICB-UFRJ

01.011 **Low level laser therapy in the miotoxicity induced by *Bothrops jararacussu* snake venom on C2C12 muscle cells**. Silva CAA[1], Silva LMG[1], Rocha CR[1], Ferrari RAM[1], Cogo JC[2], Zamuner SR[1] [1]Uninove – Ciências da Reabilitação, [2]UNIVAP – Fisiologia

01.012 **Redox profile in liver of silver catfish subjected to MS222 anesthesia**. Gressler LT[1], Parodi VP[1], Riffel APK[1], Saccol ETH[1], Costa ST[2], Pavanato MA[1], Baldisserotto B[1] [1]CESNORS-UFSM – Fisiologia e Farmacologia, [2]UFSM – Zootecnia

01.013 **CXCL12/SDF-1 and histamine stimulate mice pulmonary fibroblast to produce CXCL1/KC**, **CXCL2/MIP-2 AND CCL3/MIP-1α**. Danilucci TM, Oliveira SHP FOA-Unesp – Pharmacology

01.014 **Pharmacologic evaluation of new multi-target α1A/D-adrenoceptors and 5-HT1A antagonists candidates to lead compounds for the treatment of benign prostatic hyperplasia**. Chagas-Silva F[1], Romeiro LAS[2], Barberato LC[3], Silva RO[3], Lemes LFN[3], Nascente LC[3], Nöel FG[1], Silva CLM[1] [1]ICB-UFRJ – Farmacologia e Química Medicinal, [2]FS-UNB – Ciências Farmacêuticas, [3]LADETER-UCB – Química Bioinorgânica e Medicinal

01.015 **Influence of Verapamil and exercise training on cardiac function and morphometry in rats**. Signor I[1], Aguiar DH[2], Sugizaki MM[2], Gomes LFF[1], Rodrigues RWP[2], Mueller A[2] [1]UFMT, [2]UFMT – Ciências da Saúde

01.016 **The effects of intense and exhaustive exercise in isolated uterus of C57BL/6 female mice**. Costa AEA[1], Silva JLV[2], Simões MJ[3], Nouailhetas VLA[1] [1]Unifesp – Biofísica, [2]Uninove – Farmácia-Bioquímica, [3]Unifesp – Morfologia

02. Neuropharmacology

02.001 **Neuropharmacological effects of lipoic acid and ubiquinone on the mRNA level of Interleukin-1B and acetylcholinesterase activity in rat hippocampus after seizures**. Oliveira GALD[1], Santos PS[1], Pires LF[2], Freitas RM[1] [1]UFPI – Pharmaceutical Sciences, [2]UFPI – Pharmacology

02.002 **The microinjection of L-proline but not of D-proline into the paraventricular nucleus evokes cardiovascular responses in unanesthetized rats**. Lopes Azevedo S, Busnardo C, Corrêa FMA USP – Farmacologia

02.003 **Effects of cannabidiol administration into the ventral medial prefrontal cortex of rats submitted to the forced swimming test**. Sartim AG[1], Guimarães FS[2], Joca SRL[1] [1]FCFRP-USP, [2]FMRP-USP – Farmacologia

02.004 **The role of kinin B2 receptor on amyloid-ß– induced neuroinflammation in vivo**: **Evidence for the modulation of PKC and MAPK pathways**. Bicca MA, Loch-Neckel G, Figueiredo CP, Costa R, Calixto JB UFSC – Farmacologia

02.005 **Noradrenergic and serotonergic neurotransmitions of the ventral medial prefrontal cortex modulate food intake in rats**. Stanquini LA[1], Joca SRL[2], Scopinho AA[1] [1]FMRP-USP – Farmacologia, [2]FCFRP-USP – Física e Química

02.006 **Montelukast decrease pentylenetetrazol-induced seizures**. Jesse AC, Lenz Q, Mello CF UFSM – Fisiologia e Farmacologia

02.007 **Systemic administration of different doses of antioxidant agent attenuates the increased conditioned emotional response induced by restraint-stress**. Fedoce AG[1], Lisboa SF[1], Souza-Pinto NC[2], Resstel LBM[1] [1]FMRP-USP – Farmacologia, [2]IQ-USP – Bioquímica

02.008 **Stimulatory-M_1**, **inhibitory-M_2**, **inhibitory-A_1 and stimulatory-A_{2A} presynaptic receptors play keys roles in the facilitatory effect caused by methylprednisolone in neuromuscular transmission**. Ambiel CR[1], Ramos EP[2], Dal Belo CA[3], Corrado AP[4], Correia-de-Sá P[5], Alves-do-Prado W[2] [1]UEM – Ciências Fisiológicas, [2]UEM – Farmacologia e Terapêutica, [3]UNIPAMPA, [4]FMRP-USP – Farmacologia, [5]ICBAS-UP

02.009 **Effect of the dorsolateral periaqueductal gray CB1 cannabinoid receptor antagonism in the expression of contextual fear conditioning**. Uliana DLM[1], Hott SC[2], Lisboa SF[2], Resstel LBM[2] [1]USP – Farmacologia, [2]FMRP-USP – Farmacologia

02.010 **Blockage of N-type voltage-gated calcium channels, but not P/Q-type, inhibits trypsin-evoked scratching behavior in mice**. Maciel IS[1], Azevedo MV[2], Morrone FB[2], Souza HA[3], Gomez MV[4], Campos MM[5] [1]PUCRS – Farmacologia, [2]LAFAP-PUCRS – Pharmacy, [3]UFMG – Neuroscience, [4]UFMG – Neuroscience, [5]PUCRS – Toxicology and Pharmacology

02.011 **Effects of phenobarbital on bone repair and biomechanics in rats**. Ferreira LVC[1], Marchi KC[2], de Ávila MA[1], Pereira VA[1], Camilli JA[3], Soares EA[1] [1]Unifenas – Farmacologia e Cirurgia Experimental, [2]FMRP-USP – Farmacologia, [3]IB-Unicamp – Anatomia

02.012 **Montelukast prevents disruption of the blood-brain barrier (BBB) associated with PTZ-induced seizures**. Marafiga JR, Jesse AC[1], Lenz Q[2], Mello CF[2] [1]UFSM – Neurotoxicity and Psychopharmacology

02.013 **Trans and n-6 fatty acids increases anxiety-like symptoms induced by DL-amphetamine in rats**. Schuster AJ, Kuhn FT, Roversi K, Antoniazzi CTD, Barcelos RCS, Benvegnú DM, Trevizol F, Pase CS, Dias VT, Roversi K, Bürger ME UFSM – Fisiologia e Farmacologia

02.014 **Fish oil provides sustained and reproducible antiamnestic effect after transient, global cerebral ischemia: Influence of different treatment regimens**. Ferreira EDF[1], Mori MA, Oliveira RMW[2], Milani H[2] [1]UEM – Farmácia e Farmacologia, [2]UEM – Farmacologia e Terapêutica

02.015 **Beta1 and beta2 adrenoceptors in the medial amygdaloid nucleus modulate the cardiovascular responses to acute restraint stress in rats**. Fortaleza EAT, Scopinho AA, Corrêa FMA FMRP-USP – Farmacologia

03. Psychopharmacology

03.001 **5-HT1A receptor activation in the dorsomedial hypothalamus attenuates fear-like defensive behaviors**. Biagioni AF, De Oliveira RC, Zangrossi Jr H, Coimbra NC FMRP-USP – Pharmacology

03.002 **Transient receptor potential ankirin 1 (TRPA1) mediates antidepressant-like action on forced swimming test in mice**. Cavalcante JM[1], Norões MM[1], Soares-Rachetti VP[1], Gavioli EC[1], André E[1] UFRN – Farmacologia Comportamental

03.003 **Investigation of the involvement of alpha-1-adrenoceptors in the behavioral effects induced by imipramine in the tail suspension and rota-rod tests**. Ribeiro CAS, Pupo AS IBB-Unesp – Farmacologia

03.004 **Evaluation of endogenous and exogenous sexual hormones influences on cocaine-sensitization in female rats**. Souza MF[1], Couto-Pereira NS[2], Caletti G[1], Bisognin KM[1], Freese L[1], Olguins D[1], Gomez R[3], Barros HMT[1] [1]UFCSPA – Psicofarmacologia, [2]UFRGS – Bioquímica, [3]UFRGS – Farmacologia

03.005 **Synergistic interaction between serotonin and opioids in the dorsal periaqueductal gray assessed in the elevated T-maze**. Silva PRA[1], Roncon CM[1], Zangrossi Jr H[2], Graeff FG[3], Audi EA[1] [1]UEM – Farmacologia e Terapêutica, [2]FMRP-USP, [3]INeC

03.006 **Naloxone blocks panicolytic-like effect of a 5-HT$_{1A}$-receptor agonist in the dorsal periaqueductal gray: Evidence from the elevated T-maze**. Roncon CM[1], Biesdorf C[1], Zangrossi Jr H[2], Graeff FG[3], Audi EA[1] [1]UEM – Farmacologia e Terapêutica, [2]FMRP-USP – Farmacologia, [3]INeC

03.007 **A 5-HT1A receptor antagonist blocked the panicolytic-like effect of morphine in the dorsal periaqueductal gray of rats tested in the elevated T-maze**. Roncon CM[1], Almeida CB[1], Audi EA[1], Graeff FG[2], Zangrossi Jr H[2] [1]UEM – Farmacologia e Terapêutica, [2]USP

03.008 **Effects of cannabidiol on haloperidol-induced catalepsy in mice**. Sonego AB[1], Gomes FV[1], Del Bel EA[2], Guimarães FS[1] [1]FMRP-USP – Pharmacology, [2]FORP-USP – Morfology, Physiology and Stomatology

03.009 **Inhibition of inducible nitric oxide synthase (iNOS) present in the dorsolateral periaqueductal gray matter of rats decreases anxiety induced by ethanol abstinence in rats**. Contardi EB, Bonassoli VT, Milani H, de Oliveira RMMW UEM-DFT

03.010 **Evaluation of arginase pathway and oxidative status in platelets from patients with major depressive disorder**. Oliveira MB[1], Mury WV[1], Pinto NO[1], Costa CA[1], Resende AC[1], Brunini TMC[1], Mendes Ribeiro AC[2] [1]UERJ – Farmacologia e Psicobiologia, [2]UERJ / UNIRIO – Farmacologia e Psicobiologia

03.011 **Role of the endocannabinoid system in defensive responses mediated by the dorsolateral periaqueductal gray of rats**. Viana TG, Aguiar DC, Moreira FA UFMG – Pharmacology

04. Inflammation

04.001 **Evaluation of the involvement of endothelins in the inflammatory process induced by superoxide anion**. Serafim KGG, Zarpelon AC, Verri Jr WA UEL – Ciências Patológicas

04.002 **Leptin upregulates lipid mediators expression in primary culture of pulmonary endothelial cells activated by LPS**. Gasparin RM[1], Landgraf MA[2], Santos LA[2], Azevedo RL[2], Câmara NOS[3], Fernandes L[2], Landgraf RG[2] [1]Unifesp, [2]Unifesp – Ciências Biológicas, [3]USP – Imunologia

04.003 **Increased inflammatory response induced by new strain of *Proteus mirabilis* is modulated by leukotrienes expression**. Santos LA[1], Ferreira RR[2], Gasparin RM[1], Tambellini VY[2], Silva RC[3], Landgraf MA[1], Landgraf RG[1] [1]Unifesp – Ciências Biológicas, [2]ICB-USP – Biotério Central, [3]Unifesp – Medicina Translacional

04.004 **Role of TRPV1 and TRPA1 receptors in skin inflammation induced by formaldehyde, xylene and toluene in mice**. Norões MM, Cavalcante JM, Soares BL, Gavioli EC, Soares-Rachetti VP, André E UFRN – Farmacologia Comportamental

04.005 **Characterization of the anti-inflammatory effect from the essential oil of *Citrus latifolia* Tan**. Amorim JL[1], Pinheiro MMG[1], Simões AC[2], Tinga ACC[3], Alviano DS[3], Silva AJR[2], Alviano CS[3], Fernandes PD[1] [1]ICB-UFRJ, [2]UFRJ – Natural Product, [3]UFRJ – Microbiology

04.006 **Adenosine deaminase activity as a biochemical marker of inflammatory response in goats infected by caprine arthritis-encephalitis virus**. Cavalcante IJM[1], Rodrigues LFS[2], Vale MR[1], Nunes MO[1] [1]UFC – Physiology and Pharmacology, [2]UFRA – Animal Health and Production

04.007 **Pyrrolidine dithiocarbamate inhibits UVB-induced skin oxidative stress and inflammation in hairless mice**. Ivan ALM[1], Campanini MZ[1], Martinez RM[1], Ferreira VS[1], Vicentini FTMC[2], Vilela FMP[2], Zarpelon AC[3], Fonseca MJV[2], Baracat MM[1], Georgetti SR[1], Verri Jr WA[3], Casagrande R[1] [1]UEL – Ciências Farmacêuticas, [2]FCFRP-USP – Ciências Farmacêuticas, [3]UEL – Ciências Patológicas

04.008 **Activity of adenosine deaminase (ADA) as a biochemical marker of inflammatory response in patients with visceral leishmaniasis (kala-azar)**. Cavalcante IJM[1], Galvão LM[1], Nunes MO[1], Gonçalves RP[2], Vale MR[1] [1]UFC – Physiology and Pharmacology, [2]UFC – Clinical and Toxicological Analysis

04.009 **Evaluation of antinociceptive and anti-inflammatory activity of new substances derived from isatin**. Sardella TB[1], Silva BV[2], Pinto AC[2], Fernandes PD[1] [1]ICB-UFRJ, [2]UFRJ – Chemistry Institute

04.010 **Anti-inflammatory evaluation of the extract from Saracura-mirá**. Almeida TS[1], Santos SCM[1], Simen TJM[2], Finotelli P[2], Oliveira DR[2], Leitão SG[2], Fernandes PD[1] [1]ICB-UFRJ, [2]UFRJ – Pharmacy

04.011 **CCL3/MIP1alpha induces calcium signaling in cells from rat pre-optic area microcultures but not TNF-alpha or IL-6 synthesis**. Soares DM[1], Ott D[2], Souza GEP[3], Roth J[2] [1]USP – Farmacologia, [2]Justus-Liebig University – Veterinary Physiology, [3]FCFRP-USP – Farmacologia

04.012 **Chemokines and mitochondrial products activate neutrophils to amplify organ injury during mouse acute liver failure**. Marques PE[1], Amaral SS[1], Pires DA[1], Nogueira LL[1], Oliveira AG[1], Soriani FM[2], Teixeira MM[3], Menezes GB[1] [1]UFMG – Morfologia, [2]UFMG – Genética, [3]UFMG – Bioquímica e Imunologia

04.013 **A role for proteinase-activated receptor (PAR)-2 in tryptase-induced eosinophil migration in experimental pleurisy**. Matos NA, Matsui TC, Klein A ICB-UFMG – Farmacologia

04.014 **Lung injury induced by intestinal ischemia reperfusion in obese mice**. Fantozzi ET[1], Rodrigues AS[1], Romero DC[1], Breithaupt-Faloppa AC[2], Oliveira-Filho RM[1], Spina D[3], Vasquez YR[3], Tavares-de-Lima W[1] [1]USP – Farmacologia, [2]HC-FMUSP, [3]Kings College London – Pulmonary Pharmacology

04.015 **Anti-inflammatory activities of *Herissantia crispa* L. glycosides isolated**. Silva SC[1], Carvalho PRC[1], Oliveira TB[1], Araújo LCC[1], Mota FVB[1], Aguiar JS[1], Silva TG[1], Souza MFV[2], Matias WN[2], Gomes RA[2], Teles YCF[2] [1]CCB-UFPE – Bioensaios para Pesquisa de Fármacos, [2]CCS-UFPB – Ciências Farmacêuticas

04.016 **Hydrogen sulfide modulates reductase glutathione activity and reduced glutathione levels in allergic mice lungs**. Mendes JA[1], Campos D[1], Gurgueira SA[2], Vercesi AE[2], Florenzano J[3], Costa SKP[3], Muscará MN[3], Ferreira HHA[1] [1]USF – Alergia e Inflamação, [2]Unicamp – Patologia Clínica, [3]USP – Farmacologia

04.017 **Anti-inflammatory evaluation of the extract from flowers of *Couorupita guianensis*.** Santos SCM[1], Almeida TS[1], Costa DCM[2], Alviano DS[2], Alviano CS[2], Fernandes PD[1] [1]ICB-UFRJ, [2]UFRJ – Microbiology

04.018 **Suppression neutrophil migration by NO signaling pathway mediated by anti-inflammatory effect of sulfacted-polyssacaride fraction of extracted from red algae *Hypnea musciformis* in mice**. Candeira SJN[1], Sales AB[2], Brito TV[2], Prudêncio RS[2], Vieira Júnior FC[2], Medeiros JVR[2], Souza MHLP[3], Barbosa ALR[2] [1]UFPI, [2]LAFFEX-UFPI, [3]LAFICA-UFC

04.019 **Role of Akt and Erk 1/2 signaling pathways in attenuation of LPS-induced acute lung injury by exogenous leptin, in mice**. Landgraf MA[1,2], Silva RC[3], Correia-Costa M[2], Pacheco-Silva A[3], Câmara NOS[2], Landgraf RG[1] [1]Unifesp – Ciências Biológicas, [2]ICB-USP – Imunologia, [3]Unifesp – Medicina Translacional

04.020 **Cannabinoids inhibit the migration of microglial-like cells in response to the HIV protein Tat through the CB2 cannabinoid receptor**. Fraga D[1], Raborn E[2], Ferreira GA[2], Cabral GA[2] [1]UFPR – Farmacologia, [2]VCU – Microbiology Immunology

04.021 **Role of female sex hormones on cellular recruitment to the lungs after OVA challenge in a murine model of asthma**. Golega B, Franco ALS, Oliveira-Filho RM, Tavares de Lima W ICB-USP – Farmacologia

04.022 **Suppressive effect of gold nanoparticles on ovalbumin-induced airway inflammation in an asthmatic mouse model**. Santos RV[1], Brito FA[1], Ferro JNS[1], Agra LC[1], Santos CE[2], Hickmann JM[2], Giacomelli C[3], Cordeiro RSB[4], Martins MA[4], Barreto E[1] [1]UFAL – Biologia Celular, [2]UFAL – Óptica e Materiais, [3]UFAL – Polímeros e Colóides, [4]IOC – Inflamação

04.023 **Evaluation of antinociceptive activity and anti-inflammatory of new substances derived from convolutamydine A**. Lisbôa YL[1], Gonçalves MR[1], Silva BV[2], Pinto AC[2], Fernandes PD[1] [1]ICB-UFRJ, [2]UFRJ – Chemistry

04.024 **Neutrophil extracellular traps contribute to organ dysfunction during endotoxic shock and sepsis**. Czaikoski PG[1], Nascimento DCB[2], Sônego F[1], Castanheira FV[1], Souto FO[2], Sousa RB, Abreu M[3], Alves-Filho JF[1], Cunha FQ[1] [1]FMRP-USP – Pharmacology, [2]FMRP-USP – Immunology, [3]FMRP-USP – Pathology

04.025 **Inhibitory effect of statin on the microcirculation *in situ*.** Ames FQ, Barbosa CP, Bracht L, Estevão-Silva CF, Ritter AMV, Arruda LLM, Cuman RKN, Bersani-Amado CA UEM – Pharmacology and Therapeutics

04.026 **The anti-inflammatory compound LASSBIO-930 prevents alveolar bone loss in ligature-induced periodontitis in rats**. Silva NLC[1], Maia RC[1], Silva LL[1], Ramos BF[1], Soares MA[1], Cabral MG[2], Abrahão AC[2], Camargo GACG[3], Barreiro EJ[1], Miranda ALP[1], Tributino JLM[4] [1]FF-UFRJ, [2]FO-UFRJ – Patologia e Diagnóstico Oral, [3]PUNF-UFF, [4]ICB-UFRJ

04.027 **Anti-inflammatory activity of new alkaloid isopropyl N-methylanthranilate from the essential oil of *Choisya ternate* Kunth and analogs methyl and propyl N-methylanthranilate**. Pinheiro MMG[1], Radulovic NS[2], Miltojevic AB[2], McDermott M[3], Waldren S[3], Parnell JA[3], Boyan F[3], Fernandes PD[1] [1]ICB-UFRJ, [2]University of Nis – Chemistry, [3]Trinity College Dublin – Pharmacy and Pharmaceutical Sciences

04.028 **Nitric oxide and peroxynitrite as signaling agents for NOS-2 expression in vascular smooth muscle cells**. Scheschowitsch K[1], Sordi R[1], Moraes JA[2], Barja-Fidalgo TC[2], Assreuy J[1] [1]UFSC – Pharmacology, [2]UERJ – Pharmacology

04.029 **Regulatory activity of annexin-1 on the model of asthma induced by house dust mite in mice**. Trentin PG[1], Souza DM[1], Flower RJ[2], Perretti M[2], Martins MA[1], Silva PMR[1] [1]Fiocruz – Inflammation, [2]The William Harvey Institute – Biochemical Pharmacology

04.030 **The N-acylhydrazone derivative LASSBIO-897 suppresses lung inflammation caused by silica particles in mice**. Arantes ACS[1], Ferreira TPT[1], Ciambarella BT[1], Trentin PG[1], Ramos TJ[1], Amigo YS[1], Barreiro EJ[2], Fraga CAM[2], Martins MA[1], Silva PMR[1] [1]IOC – Inflamação, [2]UFRJ – Substâncias Bioativas

04.031 **Clinics**, **gastroscopical and histopathological findings after 28 consecutive days of meloxicam and carprofen treatment**. Portugal MNM[1], Erthal E[1], Alcântara CF[1], Knopf T[1], Benevenho AC[2], Miara LC[1], Quitzan J[1], Pimpão CT[1] [1]PUCPR – Agricultural Sciences and Veterinary Medicine, [2]USP – Agricultural Sciences and Veterinary Medicine

04.059 **Endogenous hydrogen sulfide modulates inflammatory cell infiltration and airway remodeling in the lung of allergic mice**. Guedes CEV[1], Pereira JA[2], Mendes JA[1], Rocha T[2], Ferreira HHA[1] [1]USF – Inflammation Research, [2]USF – Multidisciplinary Laboratory

05. Pain and Nociception

05.001 **Antinociceptive effect of intrathecal bolus injection or continuous infusion of the N-type voltage-sensitive Ca^{2+} channel blocker Phα1β on a rat model of neurophatic pain**. Rosa F[1], Trevisan G[1], Andrade LE[2], Tonello R[1], Gomez MV[3], Calixto JB[2], Ferreira J[1] [1]UFSM – Química, [2]UFSC – Farmacologia, [3]UFMG – Farmacologia

05.002 **Peripheral mechanisms involved in the hyperalgesia induced by the activation of P2X7 receptors in the rat knee joint**. Teixeira JM, Parada CA, Tambeli CH IB-Unicamp – Biologia Estrutural e Funcional

05.003 **Study of visceral antinociceptive potential of bee *Apis mellifera* venom**. Costa MFB, Campos AR[1], Abdon APV[1], Vasconcelos RP[1], Castro CA[1], Lima DB[2], Torres AFC[3], Toyama MH[4], Martins AMC[3] [1]UNIFOR, [2]UFC, [3]UFC – Análises Clínicas e Toxicológicas, [4]Unesp-Litoral Paulista

05.004 **Mechanisms underlying activation of P2X3 receptors induce mechanical hyperalgesia in the gastrocnemius muscle of rats**. Schiavuzzo JG[1], Melo B, Santos DFS, Teixeira JM[2], Oliveira Fusaro MC[1], Parada CA[2] [1]Unicamp – Ciências Aplicadas, [2]IB-Unicamp – Biologia Estrutural e Funcional

05.005 **Mediation of the antinociceptive effect of crotoxin in characteristic nociception of experimental autoimmune encephalomyelitis (EAE)**, **a model of multiple sclerosis**. Teixeira NB[1], Fonseca LA[1], Sampaio SC[1], Basso AS[2], Cury Y[1], Picolo G[1] [1]IBu – Dor e Sinalização, [2]Unifesp – Imunologia

05.006 **Euphol**, **a tetracyclic triterpene produces antinociceptive effects in inflammatory and neuropathic pain**: **The involvement of cannabinoid system**. Dutra RC[1], Silva KABS[1], Bento AF[1], Marcon R[1], Paszcuk AF[1], Meotti FC[1], Pianowski LF[2], Calixto JB[1] [1]UFSC – Farmacologia, , [2]Pianowski & Pianowski Ltda

05.007 **Cytotoxicity and histological assessment of rat skin after treatment with elastic and conventional liposomal butamben gel formulations**. Cereda CMS[1], Franz-Montan M[1], Brito Junior RB[2], de Araújo DR[3], de Paula E[1] [1]IB-Unicamp – Bioquímica, [2]SLMandic – Biologia Molecular, [3]UFABC – Ciências Humanas e Naturais

05.008 **Involvement of the NO/cGMP/PKG/KATP pathway and endogenous opioids in the antinociceptive effect of polysaccharide from the red algae**, ***Gracilaria caudata***. Sales AB[1], Vieira Júnior FC[1], Candeira SJN[1], Medeiros J-VR[1], Souza MHLP[2], Barbosa ALR[1] [1]UFPI-LAFFEX, [2]LAFICA-UFC-

05.009 **The role of substance P and NK_1 receptors in inflammatory and neuropathic orofacial pain**. Teodoro FC[1], Martini AC[2], Rae GA[2], Zampronio AR[1], Chichorro JG[1] [1]UFPR – Pharmacology, [2]UFSC – Pharmacology

05.010 **Synergistic antinociceptive effect of diazoxide**, **an activator of ATP-sensitive K^+ channels**, **and morphine in diabetic neuropathic pain in rats**. Neufeld M[1], Pinto RB[1], Schreiber AK[1], Cunha TM[2], Cunha FQ[2], Cunha JM[1] [1]UFPR – Farmacologia, [2]FMRP-USP – Farmacologia

05.011 **Fructose-1**,**6-bisphosphate reduces neuropathic pain via adenosine activating A1 and A2A receptors**: **Role of NO/cGMP/PKG/KATP signaling pathway**. Milanez PAO, Medeiros DC, Zarpelon AC, Verri Jr WA UEL – Patologia

05.012 **Critical role of PAR-2 activation by mast cell tryptase on the development of postoperative pain**. Oliveira SM, Silva CR, Ferreira J UFSM – Química

05.013 **The influence of B vitamins on thermal and mechanical hyperalgesia induced by constriction of the infraorbital nerve in rats**. Kopruszinski CM, Reis RC, Chichorro JG UFPR – Farmacologia

05.014 **Role of TNF-α in intense acute swimming-induced delayed onset muscle soreness in mice**. Borghi SM[1], Zarpelon AC[1], Cardoso RDR[1], Casagrande R[2], Verri Jr WA[1] [1]UEL – Ciências Patológicas, [2]UEL – Ciências Farmacêuticas

05.015 **Cetirizine and Immepip potentiated the analgesic effect of spinal morphine**. Stein TS, Souza-Silva E[1], Tonussi CR[1] [1]UFSC – Farmacologia

05.016 **Mechanisms involved in the nociception triggered by the venom of the armed spider *Phoneutria nigriventer***. Gewehr CCV[1], Oliveira SM[2], Rossato MF[2], Trevisan G[2], Ferreira J[2], Gomez MV[1] [1]IEP-Santa Casa BH, [2]UFSM – Química

05.017 **Changes in cold sensitivity as predictor of diabetic neuropathic pain**: **Involvement of TRPM8 and TRPA1 receptors**. Jesus CHA, da Justa HC, Nones CFM, Cunha JM UFPR – Farmacologia

05.018 **Evidence for the involvement of the opioid system in the antinociceptive effect of hecogenin acetate**. Gama KB[1], Santana WA[1], Branco A[2], Quintas-Junior L[3], Quintans JSS[3], Soares MBP[1], Villarreal CF[1,4] [1]CPqGM-Fiocruz-BA, [2]Uefs, [3]UFS, [4]UFBA – Farmácia

05.019 **Cannabinoid receptors differentially modulate the peripheral antinociceptive effect of cannabinoids in a model of neuropathic pain induced by streptozotocin in rats**. Schreiber AK, Neufeld M, Jesus CHA, Cunha JM UFPR – Farmacologia

05.020 **Characterization of cytoskeleton involvement in crotalphine antinociceptive effect**. ***In vivo* and *in vitro* assays**. de Almeida AC[1], Gutierrez VP[1], Sampaio SC[1], Cury Y[1] [1]IBu – Dor e Sinalização

05.021 **Aerobic exercise produces antinociception in animals submitted to rheumatoid arthritis model**. Lotin MC, Hakbarth TO, Quintão NLM UNIVALI

05.022 Antinociceptive and antidiarrheal effect of hydroalcoholic extract from *Machaerium hirtum* (inner barks) and the involvement of opiod system. Lopes JA[1], Nishijima CM[1], Hiruma-Lima CA[1], Rocha LRM[1], Sannomiya M[2], de Souza-Maria NCV[2], Tangerina MM[3], Vilegas W[3] [1]IBB-Unesp-Botucatu – Fisiologia, [2]EACH-USP, [3]IQAr-Unesp-Araraquara – Química Orgânica

06. Cardiovascular and Renal

06.001 The effect of simvastatin on cardiovascular changes and the bone loss induced by periodontitis. Machado WM[1], Olchanheski Jr LR[1], Mendes RT[2], Prestes AP[1], Costa TP[1], Fernandes D[1] [1]UFPG – Pharmaceutical Sciences, [2]UFPG – Dentistry

06.002 RAS blockade minimizes proteinuria in 2K-1C renal hypertensive rats. Corrêa JWN[1,2], Girardi ACC[2], Salles T[2], Yogi A[3], Callera GE[3], Briones AM[3], Din Cat AN[3], He Y[3], Touyz RM[3], Bendhack LM[4], Krieger JE[2] – [1]UFAM – Physiological Sciences [2]InCor-HC-FMUSP [3]University of Ottawa – Kidney Research, [4]FCFRP-USP – Pharmacology

06.003 Mechanisms underlying the vasorelaxant action of the labdane ENT-3-acetoxy-labda-8(17),13-dien-15-oic acid in the rat aorta. Simplício JA[1], Ambrósio SR[2], Batalhão ME[3], Carnio EC[3], Tirapelli CR[4] [1]FMRP-USP – Pharmacology, [2]Unifran – Sciences and Technology, [3]EERP-USP – General and Specialized Nursing, [4] EERP-USP – Psychiatric Nursing and Human Sciences

06.004 Vascular effects of chronic ethanol consumption, alone or in association with stress, in adult rats: Role of cyclooxygenase and nitric oxide pathway. Cordellini S[1], Baptista RFF[1], Chies AB[2] [1]IBB-Unesp-Botucatu – Farmacologia, [2]FAMEMA – Fisiologia

06.005 Consequence of the abstinence syndrome to ethanol on vascular reactivity and behavior of animals tested in the EPM. Gonzaga NA[1], Padovan CM[2], Tirapelli CR[3] [1]FMRP – Farmacologia, [2]FFCLRP-USP – Psicologia, [3]EERP-USP – Enfermagem Psiquiátrica e Ciências Humanas

06.006 P1 and P2 receptors modulate the inotropism and chronotropism in isolated right atrium (RA) from normotensive (NWR) and hypertensive rats (SHR). Rodrigues JQD[1], Silva Junior ED[1], Alves GA[2], Câmara H[1], Caricati-Neto A[1], Jurkiewicz NH[1], Jurkiewicz A[1] [1]Unifesp – Farmacologia, [2]Unifesp – Biofísica

06.007 Acute ethanol intake increases the production of superoxide anion in mesenteric bed. Hipolito UV[1], Callera GE[2], Touyz RM[2], Tirapelli CR[3] [1]FMRP-USP – Farmacologia, [2]Universidade de Ottawa, [3]EERP-USP

06.008 Effect of a potentiator of bradykinin from *Caudisona durissus cascavella* in normotensive and renovascular hypertensive rats. Martins PL[1], Gomes Jr NE[1], Galeno DML[1], Santos CF[1], Carvalhos KM[2], Cardi BA[2], Fonteles MC[1], Nascimento NRF[1] [1]ISCB – Fisiofarmacologia Cardiovascular e Renal, [2]ISCB – Toxinologia e Farmacologia Molecular

06.009 Anti-platelet activity of the haem-independent soluble guanylyl cyclase activator BAY 60-2770 in human washed platelets. Mendes-Silvério CB, Morganti RP, Anhê GF, Mónica FZT, De Nucci G, Antunes E Unicamp – Pharmacology

06.010 The role of aldosterone in the development of albuminuria and podocyte injury in 2K,1C hypertensive rats. Singulani JL[1], Coimbra TM[2], Francescato HDC[2], Costa RS[3], Silva GEB[3], Coelho LTER[4], Coelho EB[1] [1]FMRP-USP – Farmacologia, [2]FMRP-USP – Fisiologia, [3]FMRP-USP – Patologia, [4]FMRP-USP – Clínica Médica

06.011 Intracapsular LPA treatment recovers renal glomerular function of wistar rats subjected to kidney ischemia-reperfusion. Gonsalez SR[1], Leal AC[1], Verdoorn KS[2], Beiral HJV[2], Einicker Lamas M[2], Lara LS[1] [1]UFRJ – Farmacologia, [2]UFRJ – Biofísica

06.012 Cardiometabolic risk evaluation in rats submitted to neonatal leptin treatment. Marques EB, Oliveira GF, Silva RM, Graça RO, Scaramello CBV LAFE-UFF

06.013 Resveratrol improves the endothelium-dependent vasorelaxation in 2K-1C hypertension. Scalabrini AC[1], Oliveira JC[2], Antonietto CRK[1], Talita SM[1], Restini CBA[3] [1]Unaerp – Ciências Farmacêuticas, [2]Unaerp – Nutrição, [3]Unaerp – Medicina

06.014 Nitric oxide diminishes matrix metalloproteinase-9 expression in endothelial cells. Meschiari CA[1], Izidoro-Toledo TC[1], Gerlach RF[2], Tanus-Santos JE[1] [1]FMRP-USP – Pharmacology, [2]FORP-USP – Morphology, Stomatology and Physiology

06.015 Effect of the extract of *Euterpe oleracea* Mart. (AÇAI) on cardiovascular changes and oxidative stress in spontaneously hypertensive rats. Cordeiro VSC[1], Carvalho LCRM[1], Costa CA[1], Bem GF[1], Souza MAV[1], Sousa PJC[2], Soares de Moura R[1], Resende AC[1] – [1]UERJ – Farmacologia e Psicobiologia, [2]UFPA – Farmácia

06.016 Effect of aminoguanidine into the paraventricular nucleus of the hypothalamus on cardiovascular and autonomic modulation in conscious rats during LPS endotoxemia. Matsumoto AK[1], Silva AMD[1], Abreu SB[1], Pinge-Filho P[2], Martins-Pinge MC[1] [1]UEL – Fisiologia, [2]UEL – Patologia

06.017 Mechanisms of action vasorelaxant induced adrenomedullin in rat carotid. Passaglia P[1], Tirapelli SD[2], Tirapelli CR[3] [1]USP – Clínica Médica, [2]USP – Cirurgia e Anatomia, [3]USP – Enfermagem Psiquiátrica e Ciências Humanas

06.018 The role of oxidative stress and inflammation during nitrate tolerance induced by sodium nitroprusside. Diniz MC[1], Olivon VC[2], Tavares LD[3], Santos RAS[2], Souza DG[3], Bonaventura D[1] [1]UFMG – Pharmacology, [2]UFMG – Physiology and Biophysics, [3]UFMG – Microbiology

06.019 Tolerance and cross-tolerance induced by nitroglycerin and by the new nitrite donor CIS-[RU(BPY)2(PY)(NO2)](PF6) in cava vein. Paulo M, Silva RS, Bendhack LM FCFR-USP – Physics and Chemistry

06.020 A new vasodilator does not induce tolerance in rat aorta. Banin TM[1], Da Silva RS[1], Bendhack LM[1] [1]FCFRP-USP – Physics and Chemistry

06.021 Do mitochondria modulate the positive inotropic effect produced by ATP and UTP in isolated left atrium from normotensive and hypertensive rats? Câmara H[1], Rodrigues JQD[1], Silva Junior ED[1], Alves GA[2], Jurkiewicz NH[1], Jurkiewicz A[1] [1]Unifesp – Farmacologia, [2]Unifesp – Biofísica

06.022 Opioid receptors and exercise-induced cardioprotection *in vivo*. Borges J, Tibiriçá E, Lessa MA Fiocruz – Investigação Cardiovascular

06.023 **Increased sympathetic tone may contribute to the cardiovascular dysfunction of sepsis**. Favero AM[1], Sordi R[1], Nardi GM[2], Assreuy J[1] [1]UFSC – Farmacologia, [2]UNOESC

06.024 **Kinin B1 receptor modulates L-arginine uptake and nitric oxide generation in endothelial cells**. Torres TC, Tudela RC, Loiola RA, Freitas JAM, Assunção NA, Pesquero JB, Fernandes L Unifesp

06.025 **A new nitric oxide (NO) donor induces similar vasodilatation in aorta from normotensive and renal hypertensive rats**. Araújo LMPC, Silva RS, Bendhack LM FCFR-USP – Physics and Chemistry

06.026 **Long-lasting effect of nitric oxide on platelet aggregation**. Gonçalves MC, Assreuy J UFSC – Farmacologia

07. Endocrine and Gastrointestinal

07.001 **Participation of nitric oxide on pathogenesis alendronate-induced gastric damage in rats**. Silva RO[1], Nicolau LAD[1], Costa NRD[1], Lucetti LT[2], Santana APM[2], Aragão KS[2], Barbosa ALR[1], Ribeiro RA[2], Souza MHLP[2], Medeiros JVR[1] [1]UFPI – Experimental Physiopharmacology, [2]UFC – Pharmacology of Inflammation and Cancer

07.002 **Protective effect of H_2S donors against alendronate-induced gastric damage in rats**. Santos MS[1], Silva RO[1], Nicolau LAD[1], Costa NRD[1], Lucetti LT[2], Santana APM[2], Aragão KS[2], Barbosa ALR[1], Ribeiro RA[2], Souza MHLP[2], Medeiros JVR[1] [1]UFPI – Experimental Physiopharmacology, [2]UFC – Pharmacology of Inflammation and Cancer

07.003 **Protective effect of sulfated-polysaccharide fraction from red algae *Gracilaria birdiae* on naproxen-induced gastric damage in rats**. Brito CFC[1], Silva RO[1], Carvalho NS[1], Bezerra TS[1], Oliveira CB[1], Damasceno SRB[1], Barbosa ALR[1], Souza MHLP[2], Medeiros JVR[1] [1]UFPI – Experimental Physiopharmacology, [2]UFC – Laboratory of Pharmacology of Inflammation and Cancer

07.004 **Role of the NO/K_{ATP} pathway in the protective effects of sulfated polysaccharide fraction from algae *Hypnea musciformis* against ethanol-induced gastric damage in mice**. Damasceno SRB[1], Rodrigues JC[1], Silva RO[1], Nicolau LAD[1], Chaves LS[2], Barros FCN[2], Freitas ALP[2], Souza MHLP[3], Medeiros JVR[1] [1]UFPI – Experimental Physiopharmacology, [2]UFC – Proteins and Carbohydrates of Marine Algae, [3]UFC – Pharmacology of Inflammation and Cancer

07.005 **Gastroprotective effect of heme-oxygenase 1/sGC/K_{ATP} pathway in alendronate-induced gastric damage in rats**. Costa NRD[1], Silva RO[1], Nicolau LAD[1], Lucetti LT[2], Santana APM[2], Aragão KS[2], Barbosa ALR[1], Ribeiro RA[2], Souza MHLP[2], Medeiros JVR[1] [1]UFPI – Experimental Physiopharmacology, [2]UFC – Pharmacology of Inflammation and Cancer

07.006 **Antioxidant activity of soy isoflavones in gastrocnemius muscle of thyrotoxic rats**. Marinello PC, Bernardes SS, Guarnier FA, Cecchini R, Cecchini AL UEL

07.007 **Activation of PPAR-gamma by rosiglitazone reduces the HPA axis hyperactivity in alloxan-diabetic rats**. Torres RC, Prevatto JP, Telles TS, Martins MA, Silva PMR, Carvalho VF Fiocruz – Fisiologia e Farmacodinâmica

07.008 **Stretch stress and sources of Ca^{2+} For ileum contraction in dystrophic mice**. Alves GA[1], Silva LR[1], Ribeiro RF[1], Aboulafia J[1], Souccar C[2], Nouailhetas VLA[1] [1]Unifesp – Biofísica, [2]Unifesp – Farmacologia

07.009 **Gastroprotective activity and mechanism of proteins from *Plumeria rubra* latex against ethanol-induced gastric ulcer in mice**. Pinheiro RSP[1], Freitas LBN[1], Luz PB[1], Marques LM[1], Souza TFG[1], Carmo LD[1], Araújo ES[2], Couto TS[1], Rangel GFP[1], Ramos MV[2], Alencar NMN[1] [1]UFC – Fisiologia e Farmacologia, [2]UFC – Bioquímica e Biologia Molecular

07.010 **Gastroprotective activity of the hydroalcoholic extract of *Stryphnodendron rotundifolium* Mart. in rodents**. Silva MR[1], Oliveira DR[2], Brito Júnior FE[2], Bento EB[2], Fernandes CN[2], De Souza HHF[2], Bezerra CF[3], Boligon AA[4], Athayde ML[4], Saraiva RA[4], Kerntopf MR[2], Costa JGM[2], Menezes IRA[2] [1]UFC – Farmacologia, [2]URCA – Química Biológica, [3]UFC – Farmacologia, [4]UFSM

09. Natural Products and Toxinology

09.001 **Hypolipidemic potential of aqueous suspension of *Bixa orellana* seeds and its partition chloroform in mice with hypercholesterolemia induced by diet modified**. Ferreira JM[1], Sousa DF[2], Pereira NBS[1], Meneses RRC[1], Holanda RTM[1], Araújo VM[1], Morais TMF[1], Dantas MB[1], Fonseca SGC[3], Queiroz MGR[1] [1]UFC – Análises Clínicas e Toxicológicas, [2]UFC – Fisiologia e Farmacologia, [3]UFC – Farmácia

09.002 **Evaluation of acute oral toxicity of a naturally occurring sesquiterpene**. Nogueira Neto JD[1], Oliveira RFAM[1], Sousa DP[2], Freitas RM[1] [1]UFPI – Bioquímica e Farmacologia, [2]UFS – Química de Produtos Naturais e Sintéticos Bioativos

09.003 **Study of antimicrobial action of aqueous extracts of joint *Plantago major* L. (Plantaginaceae) and *Punica granatum* L. (Punicaceae) and interference in action of amoxicillin *in vitro.*** Gontijo LS, Damasceno EMA, Fernandes MFG, Teles DG, Costa MM FIPMoc

09.004 **Effect of the alkaloid indigo in dextran sodium salt-induced colitis (DSS)**. Almeida ACA[1], de-Faria FM[2], Dunder RJ[2], Manzo LP[2], Socca EAR[2], Luiz-Ferreira A[2], Souza-Brito ARM[1] [1]IB-Unicamp – Biologia Estrutural e Funcional, [2]FCM-Unicamp – Farmacologia

09.005 **Tocolityc action of the flavonoid 3,6 dimethyl ether (FGAL) isolated from aerial parts of *Piptadenia stipulacea* (Benth.) Ducke involves blocked of Ca_v**. Carreiro JN, Travassos RA, Souza ILL, Vasconcelos LHC, Oliveira GA, Pereira JC, Lira DP, Santos BVO, Silva BA PgPNSB-CCS-UFPB

09.006 **Developmental toxicity of isolated and associated artesunate and mefloquine in rat**. Boareto AC[1], Araújo SL[1], Lourenço ELB[1], Lourenço AC[1], Gomes C[1], Minatovicz B[1], Lombardi N[1], Paumgartten FR[2], Dalsenter PR[1] [1]UFPR – Farmacologia, [2]Fiocruz – Toxicologia Ambiental

09.007 **Omega-3 and -6 fatty acids affect oxidative damage on mice skin exposed to UV irradiation**. Barcelos RCS, Vey LT, Benvegnú DM, Trevizol F, Segat HJ, Dias VT, Roversi K, Bürger ME UFSM – Fisiologia e Farmacologia

09.008 **Antioxidant activities from *Eugenia punicifolia* extract, a plant used in folk popular medicine of the Amazon Region**. Galeno DML[1], Boleti APA[2], Carvalho RP[1], Lima AS[2], Almeida PDO[2], Lima ES[2] [1]UFAM – Ciências Fisiológicas, [2]UFAM – Ciências Farmacêuticas

09.009 **Inhibitory effect of anethole on persistent inflammatory pain**. Arruda LLM, Ritter AMV, Estevão-Silva CF, Barbosa PB, Kummer R, Gimenez L, Silva FMS, Cuman RKN, Bersani-Amado CA UEM – Pharmacology and Therapeutic

09.010 **Anesthetic and sedative activities of essential oil of *Ocimum americanum* in silver catfish (*Rhamdia quelen*)**. Silva LL[1], Garlet QI[2], Mallmann CA[3], Baldisserotto B[4], Heinzmann BM[5] [1]UFSM – Farmacologia, [2]UFSM – Farmácia, [3]UFSM – Medicina Veterinária Preventiva, [4]UFSM – Fisiologia e Farmacologia, [5]UFSM – Farmácia Industrial

09.011 **Evaluation of gastroprotective effect of *Struthanthus marginatus* (Desr.) blume in chronic ulcers and gastric secretion models**. Silva RV, Morais TMF, Lima JS, Sousa RS, Gomes JPB, Silva SN, Cartágenes MSS, Freire SMF UFMA – Farmacologia

09.012 **Local antiophidic activity of the extract of *Bredemeyera floribunda* Willd**. Alves NTQ[1], Ximenes RM[1], Jorge RJB[1], Alves RS[1], Soares VCG[2], Costa PHS[1], Abreu ML[1], Menezes DB[3], Havt A[1], Monteiro HSA[1] [1]UFC – Physiology and Pharmacology, [2]Unicamp – Biochemistry, [3]UFC – Pathology

09.013 **Evaluation of *stryphnodendron sp* release using natural rubber latex membrane as carrier**. Romeira KM, Silva RMG, Herculano RD Unesp-Assis – Ciências Biológicas

09.014 **Increasing the antioxidant capacity of Brazilian beverage by biotransformation of flavonoids**. Silva CMG[1], Braga MA[1], Pascoal ACRF[3], Salvador MJ[2], Martinez CAR[3], Carvalho PO[4] [1]Unicamp – Bioquímica, [2]Unicamp – Biologia Vegetal, [3]USF – Biologia Molecular de Tumores, [4]USF – Biotecnologia

09.015 **Hypolipidaemic evaluation of tyramine in mice with dyslipidemia induced for poloxamer-407**. Pereira NBS[1], Morais TMF[1], Dantas MB[1], Sousa DF[2], Meneses RRC[1], Rodrigues HG[1], Holanda RTM[1], Damasceno DV[1], Ferreira JM[1], Queiroz MGR[1] [1]UFC – Análises Clínicas e Toxicológicas, [2]UFC – Fisiologia e Farmacologia

09.016 ***Rhizophora mangle* as an anti-inflammatory source of drug**: **Role on cytokines in TNBS-induced colitis in rats**. De FariaFM[1], Luiz-Ferreira A[2], SoccaEAR[1], Dunder RJ[1], Almeida ACA[3], Manzo LP[1], Silva MA[4], Vilegas W[4], Souza-Brito ARM[1] – [1]Unicamp – Farmacologia, [2]UFG – Ciências Biológicas, [3]Unicamp – Biologia Estrutural e Funcional, [4]Unesp-Araraquara – Química Orgânica

09.017 **Evaluation of antimicrobial activity of ant *Dinoponera quadriceps* venom**. Lima DB[1], Fernandes LC[1], Torres AFC[1], Mello CP[1], Menezes RRPPB[2], Costa MFB[2], Sampaio TL[1], Tessarolo LD[1], Quinet YP[3], Nogueira NAP[1], Martins AMC[1] [1]UFC – Análises Clínicas e Toxicológicas, [2]UFC – Fisiologia e Farmacologia, [3]ISCB-UECE

09.018 **Effect of fixed oil of pequi *Caryocar coriaceum Wittm* in zymosan-induced arthritis in rats**. Oliveira FFB, Araújo JCB, Ribeiro RA, Vale ML UFC – Fisiologia e Farmacologia

09.019 **Hypocholesterolemic and hypoglycemic effect of ursolic and oleanolic acid in obese mice**. Rodrigues HG[1], Melo CL[1], Melo TS[1], Damasceno DV[1], Araújo VM[1], Freitas AMP[1], Holanda RTM[1], Pessoa ODL[2], Rao VS[3], Queiroz MGR[1] [1]UFC – Análises Clínicas e Toxicológicas, [2]UFC – Química Orgânica e Inorgânica, [3]UFC – Fisiologia e Farmacologia

09.020 **Antioxidant action of lycopene in testicular deleterious effects caused by the mycotoxin zearalenone**. Boeira SP[1], Borges Filho C[2], Del Fabbro L[2], Roman SS[3], Jesse CR[2], Oliveira MS[1], Furian AF[4] [1]UFSM – Farmacologia, [2]Unipampa, [3]URI, [4]UFSM – Tecnologia e Ciência de Alimentos

09.021 ***Euterpe oleracea* Mart. (açaí) extract prevents endothelial dysfunction, oxidative stress, vascular and renal changes in 2 kidneys, 1 clip renovascular hypertension**. Costa CA[1], Carvalho LCRM[1], Emiliano da Silva AF[1], de Bem GF[1], Oliveira PRB[1], Valença SS[2], Pires KMP[2], Ognibene DT[3], Resende AC[1], Soares de Moura R[1] [1]UERJ – Farmacologia e psicobiologia, [2]UFRJ – Farmacologia, [3]UEZO

09.022 **The effects of hydroethanolic extract of *Smallanthus sonchifolius* leaves on the liver metabolic changes in streptozotocin-induced diabetic rats**. Rocha BA[1], Baroni S[1], Comar JF[2], Caparroz-Assef SM[1], Silva MARCP[1], Suzuki-Kemmelmeier F[2], Bersani-Amado CA[1] [1]UEM – Pharmacology and Therapeutic, [2]UEM – Biochemistry

09.023 **Inhibitory effect of anethole on leukocyte migration in the microcirculation of spermatic fascia *in situ*.** Estevão-Silva CF[1], Ritter AMV[1], Arruda LLM[1], Barbosa CB[1], Silva FMS[1], Kummer R[1], Perdigão TD[2], Cuman RKN[1], Bersani-Amado CA[1] [1]UEM – Pharmacology and Therapeutics, [2]UEL – f Health Sciences

09.024 **Protective effect of a hydroalcoholic extract of *Euterpe oleracea* Mart (açaí) on cardiovascular and metabolic changes induced by maternal protein restriction during pregnancy**. Bem GF, Costa CA, Oliveira PRB, Cordeiro VCS, Carvalho LCRM, Souza AV, Vieira AB, Resende AC, Soares de Moura R UERJ – Farmacologia e Psicobiologia

09.025 **Effect of estragole in experimental models of acute inflammatory response in rodents**. Silva FMS, Arruda LLM, Ritter LMV, Estevão-Silva CF, Kummer R, Freitag AF, Damião MJ, Bersani-Amado CA, Cuman RKN UEM – Pharmacology and Therapeutics

09.026 **Vascular reactivity of *Mimosa caesalpiniifolia* Benth. (Fabaceae) in mesenteric rings arteries**. Moura LHP[1], Campelo RT[1], Nunes AF[1], Sabino CKB[1], Silva-Filho JC[1], Monção NBN[2], Citó AMGL[2], Oliveira RCM[1], Arcanjo DDR[1], Oliveira AP[1] [1]UFPI – Plantas Medicinais, [2]UFPI – Química

09.027 **Study of inflammatory and myotoxic effects of *Bothrops* venoms: Effects of dexamethasone and *Eclipta prostrata* (L.)**. Patrão-Neto FC[1], Tomaz MA[2], Machado MM[1], Rocha-Júnior JR[2], Camilo RL[2], Melo PA[1] [1]UFRJ – Farmacologia e Química Medicinal, [2]UFRJ – Farmacologia das Toxinas

09.028 **Evaluation of antiobesity effect of ferulic acid in mice submitted to hypercaloric diet**. Holanda RTM[1], Melo TS[1], Lima PR[2], Carvalho KMMB[2], Morais TMF[1], Rodrigues HG[1], Melo CL[1], Santos FA[2], Rao VS[2], Queiroz MGR[1] [1]UFC – Análises Clínicas e Toxicológicas, [2]UFC – Fisiologia e Farmacologia

09.029 **Cysteine proteases from *Vasconcellea cundinamarcensis* have antimetastatic activity in colon carcinoma by death and loss of cell adhesion**. Dittz D[1], Diniz MLL[1], Viana CTR[2], Salas CE[3], Lopes MTP[1] [1]UFMG – Farmacologia, [2]UFMG – Fisiologia e Biofísica, [3]UFMG – Bioquímica

09.030 **Vascular relaxation induced by the ethanolic extract of *Tapirira Guianensis* Aubl (Anacardiaceae) in the rat aorta**. Vidal MC, Ferreira LLDM, Rodrigues AMG, Paes BM, Muzitano MF, Raimundo JM, Konno TUP, Carmo PL UFRJ

09.031 **Effect of kaurenoic acid on ovalbumin-induced asthma in mice**. Domiciano TP[1], Arakawa NS[2], Ambrósio SR[3], Casagrande R[2], Verri Jr WA[1] [1]UEL – Ciências Patológicas, [2]UEL – Ciências Farmacêuticas, [3]Unifran – Ciências Exatas e Tecnológicas

09.032 **Comparative study of the in vitro cytotoxic activity of two rear-fanged snake venoms against 3T3 fibroblasts**. Peichoto ME[1,2,3], Tavares FL[2,4], Jones SWL[2], DeKrey G[2], Mackessy SP[2] [1]INMet [2]University of Northern Colorado – Biological Sciences, [3]UNNE – Ciências Veterinárias, [4]UDC – Veterinária

09.033 **Chemical composition and cytotoxic activity of sap essential oil from two *Mangifera indica* L. fruits varieties**. Ramos EHS[1], Moraes MM[2], Militão GCG[3], Câmara CAG[2], Silva TG[1] [1]UFPE – Antibióticos, [2]UFRPE – Ciências Moleculares, [3]UFPE – Fisiologia e Farmacologia

09.034 **Pharmacological characterization of the leaves, stems and roots of *Coriandrum sativum* L. (coriander)**. Begnami AF[1], Ruiz ALTG[2], Carvalho JE[2], Rehder VLG[2] [1]FOP-Unicamp, [2]Unicamp – CPQBA

09.035 **The comparison of hypolipidemic potential of aqueous suspension and hydroalcoholic extract of *Passiflora edulis* in mice with hyperlipidemia induced by triton WR-1339**. Oliveira GP[1], Neto JNFG[1], Ferreira JM[1], Sousa DF[2], Meneses RRC[1], Oliveira KS[1], Holanda RTM[1], Rodrigues HG[1], Lemos TLG[3], Queiroz MGR[1] [1]UFC – Análises Clínicas e Toxicológicas, [2]UFC – Fisiologia e Farmacologia, [3]UFC – Química Orgânica e Inorgânica

09.036 **Toxins from the spider *Phoneutria nigriventer* inhibit nociceptive and inflammatory responses in the mouse model of hemorrhagic cystitis induced by cyclophosphamide**. Silva RBM[1], Sperotto NDM[2], de Souza AH[3], Gomez MV[3], Morrone FB[4], Campos MM[1] [1]PUCRS – Medicina e Ciências da Saúde / Toxicologia e Farmacologia, [2]PUCRS – Farmácia, [3]UFMG – Neurociências, [4]PUCRS – Biologia Celular e Molecular – Farmacologia Aplicada

09.037 **Hypolipidemic potential evaluation of cinnamic acid esters isolated from carnauba wax in dyslipidemia induced by triton WR-1339;** Meneses RRC[1], Arruda-Filho ACV[1], Melo TS[1], Ferreira JM[1], Damasceno DV[1], Pereira NBS[1], Sousa DF[2], Queiroz MGR[1], Vieira IGP[3], Guedes MIF[4] [1]UFC – Análises Clínicas e Toxicológicas, [2]UFC – Fisiologia e Farmacologia, [3]PADETEC-UFC, [4]UECE – Nutrição

09.038 **Evaluation of renal, hepatic and pancreatic functions of hypercholesterolemic animals treated with aqueous suspension of *Passiflora edulis*.** Oliveira KS[1], Neto JNFG[1], Morais TMF[1], Dantas MB[1], Pereira NBS[1], Damasceno DV[1], Araújo VM[1], Freitas AMP[1], Lemos TLG[2], Queiroz MGR[1] [1]UFC – Análises Clínicas e Toxicológicas, [2]UFC – Química Orgânica e Inorgânica

09.039 **Hypolipidemic and antioxidant potential of betulinic acid in mice with triton WR-1339-induced dyslipidemia**. Dantas MB[1], Feitosa ML[2], Sousa FCF[2], Maia AIV[3], Freitas AMP[1], Morais TMF[1], Ferreira JM[1], Araújo VM[1], Pessoa ODL[3], Queiroz MGR[1] [1]UFC – Análises Clínicas e Toxicológicas, [2]UFC – Fisiologia e Farmacologia, [3]UFC – Química Orgânica e Inorgânica

09.040 **Chemical composition of the essential oil of *Aloysia triphylla* in different seasons**. Parodi TV[1], Silva LL[2], Gressler LT[1], Cunha MA[1], Zeppenfeld CC[1], Heinzmann BM[2], Baldisserotto B[1] [1]UFSM – Fisiologia e Farmacologia, [2]UFSM – Farmácia Industrial

10. Cancer and Cell Proliferation

10.001 **Evaluation of antitumor activity of new analogues from combretastatin A4**. Sales NM[1], Amaral DM[2], Oliveira LN[2], Lima LM[2], Barreiro EJ[2], Fernandes PD[1] [1]ICB-UFRJ, [2]LASSBio

10.002 **Irradiation modulates IL-17R expression on human glioma cell line**. Gehring MP[1], Pereira TCB[2], Borges MC[3], Braga Filho A[3], Bogo MR[2], Campos MM[4], Morrone FB[1,4] [1]PUCRS – Farmacologia Aplicada, [2]PUCRS – Genômica e Biologia Molecular, [3]HSL – Radioterapia, [4]PUCRS – Toxicologia e Farmacologia

10.003 **Anticancer activity of fraction containing diterpenes from *Croton campestris A.St.-Hil***. Monteiro PA[1], Longato GB[1], Cabral E[2], Tinti SV[1], Ruiz ALTG[1], Eberlin MN[2], Foglio MA[1], Carvalho JE[1] [1]CPQBA-Unicamp, [2]IQ-Unicamp

10.004 **Antitumoral effect of *Bothrops* venoms on cells of nervous system human (SF-295)**. Morais ICO[1], Jorge RJB[2], Martins AMC[3], Ximenes RM[2], Martins AMA[2], Rodrigues FAR[2], Soares BM[2], Evangelista JSAM[4], Toyama MH[5], Moraes MO[2], Monteiro HSA[2] [1]UFC – Fisiologia e Farmacologia, [2]UFC – Physiology and Pharmacology, [3]UFC – Clinical and Toxicological Analysis, [4]UECE – Veterinary, [5]Unesp-CLP – Chemistry of Macromolecules

10.005 **Antiproliferative activity of lactones obtained by synthesis on tumor cell lines**. Silva PBN[1], Freitas JCR[2], Oliveira RA[2], Menezes PH[2], Silva TG[3], Andrade JKF[3], Militão GCG[4] [1]UFPE – Fisiologia e Farmacologia, [2]UFPE – Química Fundamental, [3]UFPE – Antibióticos, [4]UFPE – Fisiologia e Farmacologia

10.006 ***Myracrodruon urundeuva*: A citotoxicity study**. LIMA DJB[1], Ferreira PMP[2], Farias DF[3], Viana MP[3], Souza TM[3], Vasconcelos IM[4], Soares BM[1], Pessoa CO[1], Moraes MO[1], Carvalho AFU[3] [1]UFC – Fisiologia e Farmacologia, [2]UFPI – Ciências Biológicas, [3]UFC – Biologia, [4]UFC – Bioquímica e Biologia Molecular

10.007 **Derivative A398 induces apoptosis and modulates the activity of PGP in chronic myeloid leukemia cell lines**. Silveira AL[1], Faheina-Martins GV[1], Dantas BB[1], Vasconcelos FC[2], Costas F[2], Maia RC[2], Araújo DAM[1] [1]UFPB – Farmacologia Celular e Molecular, [2]INCa – Hematologia Celular e Molecular

10.008 **Protective effect of exercise-induced oxidative stress against 1.2-dimethylhydrazine colon cancer in C57BL/6 mice**. Ribeiro RF[1], Alves GA[1], Aboulafia J[1], Rosa EF[2,1], Nouailhetas VLA[1] – [1]Unifesp – Biofísica, [2]UCS

10.009 **Evaluation cytotoxic of derivative hydantoinic in heLa, PC3 And CHO cells**. Aguiar ACV[1], Câmara RBG[1], Rocha HAO[1], Lima MCA[2], Galdino SL[2], Pitta IR[2], Carvalho MS[3] [1]UFRN – Bioquímica, [2]UFPE – Antibióticos, [3]UFRN – Biofísica e Farmacologia

10.010 **Targeting the stress response as a selective mechanism to kill cancer cells**. Marinho-Filho JDB[1], Araújo AJ[1], Pessoa C[1], Costa MP[1], Diniz JC[2], Viana FA[2], Pessoa OLP[3], Silveira ER[3], Moraes MO[3], Costa-Lotufo LV[1] [1]UFC – Fisiologia e Farmacologia, [2]UERN – Química, [3]UFC – Química Orgânica e Inorgânica

10.011 **Cytotoxic effect of an abietane diterpene isolated from *Hyptis carvalhoi* (Lamiaceae) promotes cell cycle arrest in G_0/G_1 phase**. Araújo AJ[1], Lima KSB[2], Marinho-Filho JDB[1], Silveira ER[2], Moraes MO[1], Pessoa C[1], Costa-Lotufo LV[1] [1]UFC – Fisiologia e Farmacologia, [2]UFC – Química Orgânica e Inorgânica

10.012 **Modulation of endothelial cells by human tumor microenvironment: A role for synthetic analogues of lipoxins**. Vieira AM[1], Helal Neto E[1], Figueiredo CC[1], Barja-Fidalgo TC[1], Fierro IM[2], Morandi V[1] [1]DBCEL-UERJ, [2]DFP-UERJ

Poster Session 2 – Thursday 08/11/2012

01. Cellular and Molecular Pharmacology

01.017 **Influence of digoxin and physical training on cardiac function and morphology in rats** Souza KG, Aguiar DH, Sugizaki MM, Gomes LFF, Rodrigues RWP, Mueller A UFMT

01.018 **Sympathetic outflow and protein expression in the mouse submandibular gland**: **a proteomic approach**. Heluany CS, Luna MS, Yamanouye N IBu – Farmacologia

01.019 **Intrinsic activity determination of the derivatives N-phenylpiperazinics for 5HT1A receptors**. Carvalho AR[1], Nascimento Viana JB[1], Romeiro LAS[2], Nascente LC[3], Lemes LFN[3], Nöel FG[1], Silva CLM[1] [1]UFRJ – Farmacologia Bioquímica e Molecular, [2]LADETER-UnB, [3]LADETER-UCB

01.020 **Quantifying ligand bias signaling at human αlpha1A- and αlpha1b-adrenoceptors**. Lima V, Pupo AS Unesp – Farmacologia

01.021 **Androgen deprivation unravels plasticity of functional α_1-adrenoceptors mediating cauda epididymal contraction to noradrenaline**. Kiguti LRA, Pacini ESA, Pupo AS Unesp-Botucatu – Farmacologia

01.022 **Importance of the Arginine1 residue of bradykinin in the activation of the kinin B2 receptor in mouse stomach fundus**. Silva RF, Rodrigues ES, Martin RP, Oliveira L, Shimuta SI Unifesp – Biofísica

01.023 **Molecular dynamics of angiotensin AT1 receptor**: **The effect of site-directed C18S mutation**. Martin RP, Rodrigues ES, Silva RF, Oliveira L, Shimuta SI Unifesp – Biofísica

01.024 **Evidence for the interaction between the ASP301 B1 receptor´s residue and the ARG1 DES-ARG9-bradykinin peptide**. Rodrigues ES, Martin RP, Silva RF, Oliveira L, Shimuta SI Unifesp – Biofísica

01.025 **Pulmonary fibroblast spheroids from silica-stimulated mice**: **Establishment of a 3D cell culture system**. Guimarães-Silva A M[1], Trentin PG[1], Dalzy DV[1], Barbosa HS[2], Martins MA[1], Silva PMR[1] [1]Fiocruz – Inflammation, [2]Fiocruz – Structural Biology

01.027 **Pharmacologic evaluation of new alpha-1 adrenoceptor and 5-HT1A antagonists**. Nascimento Viana JB[1], Carvalho AR[1], Romeiro LAS[2], Nascente LC[3], Lemes LFN[3], Nöel FG[1], Silva CLM[1] [1]UFRJ – Farmacologia Bioquímica e Molecular, [2]LADETER-UnB, [3]LADETER-UCB

01.028 **Dual regulation of the glucocorticoid system by histamine H1 receptor signaling**. **Role of canonical and non-canonical pathways**. Zappia D[1], Granja-Galeano G[1], Fernandez N[1], Fitzsimons C[2], Monczor F[1] [1]UBA – Pharmacy and Biochemistry, [2]University of Amsterdam – Life Sciences

01.029 **Participation of cytosolic glucocorticoid receptor and Annexin-A1 on neutrophil traffic from bone marrow into blood**: **Adhesion molecule expression and SDF-1alpha/CXCR4 axis**. Machado ID[1], Santin JR[1], Ferraz-de-Paula V[1], Perretti M[2], Farsky SHP[1] [1]USP – Pharmaceutics Science, [2]William Harvey Institute – Immunopharmacology

01.030 **Protein expression during snake venom gland activation**. Luna MS[1], Valente RH[2], Perales J[2], Yamanouye N[1] [1]IBu – Farmacologia, [2]IOC-Fiocruz –Toxinologia

01.031 **Implication of purinergic P2X7 receptor in the immune profile of *Mycobacterium tuberculosis*-infected mice**. Santos Jr AA[2,1], Rodrigues-Junior VS[1], Zanin RF[3], Borges TJ[3], Bonorino C[3], Coutinho-Silva R[4], Santos DS[1], Campos MM[5,6], Morrone FB[2,6,7] [1]INCT-TB-PUCRS, [2]PUCRS – Biologia Celular e Molecular, [3]IPB-PUCRS, [4]ICCBF-UFRJ, [5]PUCRS – Medicina e Ciências da Saúde, [6]PUCRS – Toxicologia e Farmacologia, [7]PUCRS –Farmácia

01.032 **Extracellular cyclic AMP- adenosine pathway regulates skeletal muscle proteolysis**. Figueiredo LB[1], Godinho RO[1] [1]Unifesp – Pharmacology

01.033 ***In vitro* effects of the PhTx3-3 toxin obtained from the Brazilian spider *Phoneutria nigriventer* on glioma cells**. Nicoletti NF[1], Erig TC[2], Gomes MV[3], Souza AH[3], Campos MM[4], Morrone FB[1,2,5] [1]PUCRS – Biologia Celular e Molecular, [2]PUCRS – Farmácia, [3]UFMG – Medicina Molecular, [4]FO-PUCRS – Toxicologia e Farmacologia, [5]PUCRS – Toxicologia e Farmacologia

02. Neuropharmacology

02.016 **Influence of dietary trans fat on the amphetamine preference in rats**. Kuhn FT, Roversi K, Barcelos RCS, Benvegnú DM, Antoniazzi CTD, Trevizol F, Pase CS, Dias VT, Roversi K, Schuster AJ, Bürger ME UFSM – Fisiologia e Farmacologia

02.017 **The neostigmine-induced TOFfade depends on activation of inhibitory-M_2 muscarinic receptors on motor nerve terminal which is influenced by level of adenosine in synaptic cleft**. Bordignon-Antonio M, Alves-do-Prado W UEM – Farmacologia e Terapêutica

02.018 **Evaluation of the antioxidant action of drugs used in Parkinson's disease**. Farias CC[1], Bortolasci CC[1], Bonifácio KL[1], Maciel DRK[1], Lavado EL[2], Barbosa DS[1] [1]UEL – Ciências da Saúde, [2]UEL – Fisioterapia

02.019 **Both alpha1 and alpha2-adrenoceptors mediate the cardiovascular responses to noradrenaline microinjected into the dorsal periaqueductal gray of rats** Santana DAR[1], Simões TMG[1], Volpini VL[1], Resstel LBM[2], Corrêa FMA[2], Pelosi GG[1] [1]UEL – Fisiologia e Farmacologia, [2]FMRP – Farmacologia

02.020 **Time course of histological changes in a chronic brain hypoperfusion stepwise 4-vessel occlusion model in rats**: **Comparison between normotensive and spontaneously hypertensive rats**. Romanini CV, Ferreira EDF, Milani H, Oliveira RMMW UEM – Farmacologia e Terapêutica

02.021 **Chronic consumption *of* trans fatty acids from the post-weaning period can enhance the movement disorders and locomotor activity in rats adulthood**. Pase CS, Teixeira AM, Dias VT, Bürger ME UFSM – Fisiologia e Farmacologia

02.022 **Pentylenetetrazol-induced seizures alter Na^+,K^+-ATPase activity and phosphorylation state in the mice cerebral cortex**. Meier L[1], Marquezan BP[1], Funck VR[1], Oliveira CV de[1], Araújo SM[2], Zarzecki MS[2], Oliveira MS[1] [1]UFSM – Fisiologia e Farmacologia, [2]UNIPAMPA

02.023 **Time course of cognitive changes and hippocampal neurodegeneration in mice after transient global cerebral ischemia**. Soares LM, Schiavon AP, Milani H, Oliveira RMMW UEM – Farmacologia

02.024 **Effect of different atorvastatin treatments on oxidative stress markers in the rat cerebral cortex**. Grigoletto J, Oliveira CV, Pereira LM, Funck VR, Oliveira MS UFSM – Fisiologia e Farmacologia

02.025 **Haloperidol polymeric nanocapsules decrease its adverse motor side effects and oxidative stress markers in rats**. Benvegnú DM[1], Barcelos RCS[1], Boufleur N[1], Pase CS[1], Roversi K[2], Segat HJ[2], Dias VT[2], Reckziegel P[1], Flores FC[3], Ourique AF[4], da Silva C B[3], Beck RCR[4], Bürger ME[1] [1]UFSM – Farmacologia, [2]UFSM – Fisiologia e Farmacologia, [3]UFSM – Ciências Farmacêuticas, [4]UFRGS – Nanotecnologia Farmacêutica

02.026 **Vacuous chewing movements induced by reserpine in rats are related with Na^+,K^+-ATPase activity in striatum – protective effects of gallic acid**. Reckziegel P[1], Peroza LR[2], Schaffer LF[1], Ferrari MC[3], Bürger ME[4], Fachinetto F[4] [1]UFSM – Farmacologia, [2]UFSM – Bioquímica Toxicológica, [3]UFSM – Farmácia, [4]UFSM – Fisiologia e Farmacologia

02.027 **Acute exposure to toxic doses of metamidophos and depression like effects in adult male rats**. Araújo SL, Maffezzolli G, Salum N, Zaia RM, Vital MABF, Dalsenter PR UFPR – Farmacologia

02.028 **N-acetylcysteine prevents spatial memory impairment induced by chronic early postnatal glutaric acid and lipopolysaccharide in rat pups**. Rodrigues FS, Gerbatin R, Busanello GL, De Castro M, Fiorin FS, Scherer L, Schopf M, Fichera MR UFSM – Métodos e Técnicas Desportivas

02.029 **Effect of an inhibitor of HMG-CoA reductase, atorvastatin, on the activity of several antioxidant and pro-oxidant enzymes**. Oliveira CV, Pereira LM, Funck VR, Grigoletto J, Oliveira MS UFSM – Fisiologia e Farmacologia

02.030 **Behavioral and neurochemical effects of pentoxifylline in experimental model of Parkinson´s disease**. Siqueira RMP, Neves KRT, Tavares KC, Calou IBF, Cavalcante ALC, Cunha GM, Viana GSB UFC – Fisiologia e Farmacologia

03. Psychopharmacology

03.012 **Ethanol withdrawal after chronic consumption induces anxiety-like responses without altering locomotion or motor coordination in mice**. Maciel SX, Guimarães RAM, André E, Gavioli EC, Soares-Rachetti VP [1]UFRN – Biofísica e Farmacologia

03.013 **The ethanol withdrawal after chronic consumption generates anxiogenic-like responses in both female and male rats**. Ali MS[1], Santos RO[1], Souza Pinto IA[1], Santana IH[1], André E[1], Padovan CM[2], Gavioli EC[1], Soares-Rachetti VP[1] [1]UFRN – Biofísica e Farmacologia – Farmacologia Comportamental, [2]FFCLRP-USP – Psicobiologia

03.014 **Effect of alcohol and tobacco association on behaviors in the open field test in rats**. Santos CF[1], Quinteros DA[1], Caletti G[2], Wieczoreck MG[3], Schneider R[4], Gomez R[1,2,3] [1]UFRGS – Farmacologia, [2]UFCSPA – Farmacologia, [3]UFRGS – Fisiologia, [4]UFRGS – Neurociências

03.015 **Facilitation of 2-araquidonoilglicerol (2AG) signaling in the dorsolateral periaqueductal gray in rats induced anxiolytic-like effects**. Almeida-Santos AF, Gobira PH, Moreira FA, Aguiar DC UFMG – Pharmacology

03.016 **Subchronic administration of *Trichilia catigua* ethyl-acetate fraction promotes antidepressant-like effects and increases hippocampal cell proliferation in mice**. Bonassoli VT, Chassot JM, Longhini R, Milani H, Mello JCP, Oliveira RMMW [1]UEM – Farmácia e Farmacologia, [2]UEM – Farmacologia e Terapêutica,

03.017 **Evidence for simultaneous anxiolytic-like and aversive effects of pulegone, a dual behavioral activator and depressant**. Silveira NS, Prado LCS, Cunha JM, Bispo-da-Silva LB UFU – Pharmacology

03.018. **The influence of alcohol withdrawal on anxiety and S100B serum concentrations in rats**. Schneider R[1,2], Quinteros DA[1], Ferreira C[1], Silva J[1], Brolese G[2], Gonçalves CA[2], Gomez R[1,3] [1]UFRGS – Farmacologia, [2]UFRGS – Neurociências, [3]UFRGS – Fisiologia

03.019 **Influence of withdrawal syndrome to use of alcohol and cocaine in neurotransmission peripheral adrenergic**. Bomfim GHS, Verde LF, Jurkiewicz NH, Jurkiewicz A Unifesp – Farmacologia

03.020 **Evaluation of the anxiolytic activity of essential oil of *Citrus limon (L.)* Burm. F. orally in mice**. Cardoso RM[1], Viana MDM[1], Silva NKGT[1], Falcão MAP[1], Silva WL[2], Sant´Ana AEG[2], Alexandre-Moreira MS[1], Campesatto EA[1] [1]UFAL – Fisiologia e Farmacologia, [2]UFAL – Química e Biotecnologia

03.021 **Chronic alprazolam treatment induces anxiolytic and panicolytic-like effects in rats**. de Bortoli VC[1], Zangrossi Jr H[2] [1]CEUNES-UFES – Ciências da Saúde, [2]FMRP-USP – Farmacologia

03.022 **High- and low-rearing rats differ in the brain excitability controlled by the allosteric benzodiazepine site in the GABAA receptor**. Alves R, Carvalho JGB, Venditti MAC Unifesp – Psicobiologia

03.023 **Effect of vitamin E on oxidative stress and behaviors related to anxiety and depression in streptozotocin-induced diabetic rats**. Morais H, Pasquini CS, Ferreira DM, Silva LM, Beltrame OC, Cunha JM, Zanoveli JM UFPR – Farmacologia

04. Inflammation

04.032 **Anti-inflammatory and antinociceptive effects of ATB-346, a gastric sparing hydrogen sulfide-releasing naproxen, in rats with carrageenan-induced knee joint synovitis**. Ekundi-Valentim E[1,2], Rodrigues L[1], Santos KT[1], Teixeira SA[1], Wallace JL[3], Costa SK[1], Muscará MN[1] [1]USP-ICB – Farmacologia, [2]ISCISA-UAN, [3]Farncombe Institute-McMaster University

04.033 ***Achyrocline satureoides* (LAM) D.C. extract treatment prevents neutrophil migration in air pouch model**. Barioni ED[1], Santin JR[1], Shimada AL[1], Rodrigues SF[1], Machado ID[1], Ferraz-de-Paula V[1], Niero R[2], Andrade SF[2], Farsky SHP[1] [1]USP – Clinical and Toxicological Analyses, [2]Univali

04.034 **Polychlorinated biphenyl 126 inhalation alters metabolic parameters and inflammatory markers in rats**. Shimada ALB, Cruz WS, Nakasato A, Farsky SHP USP – Clinical and Toxicological Analyses

04.035 **Exposure of extracellular *Mycobacterium tuberculosis* to isoniazid decreases macrophage activation during infection**. Yamashiro LH[1], Souza NM[2], Eto C[2], Báfica A[1] LiDI-UFSC – Farmacologia

04.036 **Effect of pravastatin on aggregation and in the number of circulating platelet in non-treated and lipopolysaccharide-treated rats**. Naime ACA, Lopes-Pires ME, Mendes CB, Landucci ECT, Antunes E, Marcondes S Unicamp – Farmacologia

04.037 **Regulation of purinergic signaling in endothelial cells during chronic inflammation**. Oliveira SDS[1,2] , Oliveira NF[2], Meyer-Fernandes JR[3], Coutinho-Silva R[1], Silva CLM[2] [1]IBCCF-UFRJ, [2]ICB-UFRJ – Farmacologia Bioquímica Molecular, [3]IBqM-UFRJ

04.038 **Effect of the antioxidant epigallocatechin-3-gallate in the allergic pulmonary inflammation in lean and obese mice**. André DM, Calixto MC, Horimoto CM, Marcondes S, Lopes-Pires ME, Anhê GF, Araújo TMF, Antunes E Unicamp – Farmacologia

04.039 **Response inflammatory presents in acute pancreatitis induced by taurolithocholic acid was reverted by fucoidin**, **P and L-selectin blocker**. Carvalho ACS[1], Sousa RB[1], Costa JVG[1], Silva LMN[1], Mendes WO[1], Costa MR[1], Franco AX[1], Ribeiro RA[1], Criddle DN[2], Soares PMG[3], Souza MHLP[1] [1]UFC – Fisiologia e Farmacologia, [2]University of Liverpool, [3]UFC – Morfologia

04.040 **Evaluation of periradicular lesions in a rat model of type-2 diabetes**: **Effects of treatment with the antioxidant tempol**. Oliboni PB[1], Zollmann LA[2,3], Wolle CFB[1], Leite CE[2], Campos MM[1,2] [1]FO-PUCRS, [2]PUCRS –Toxicologia e Farmacologia, [3]PUCRS – Farmácia

04.041 **Effect of zingiber essential oil treatment on renal parameters and in the expression of cytokines proinflammatory TNF-α and anti-fibrotic BMP-7 after renal ischemia and reperfusion in mice**. Pinho RJ[1], Damião MJ[1], Silva FMS[1], Aguiar RP[1], Yamada AN[1], Freitag AF[1], Giannocco G[2], Duarte JS[2], Oliveira K[2], Cuman RKN[1] [1]UEM – Pharmacology and Therapeutics, [2]Unifesp – Endocrinology

04.042 **Pharmacological evaluation of a new series of sulfonamide derivatives designed as modulators of lung inflammation**. Souza ET[1], Carvalho VF[2], Ferreira TP[1], Ciambarella BT[1], Lima LM[2], Barreiro EJ[2], Martins MA[1], Silva PMR[1] [1]IOC – Inflamação, [2]UFRJ – Avaliação e Síntese de Substâncias Bioativas

04.043 **Antipyretic effect and central nervous system amount of dipyrone active metabolites**, **4-methylaminoantipyrine (4-MAA) and 4-aminoantipyrine (4-AA)**. Malvar DC[1], Aguiar FA[2], Vaz ALL[2], Assis DCR[1], Melo MCC[2], Clososki GC[2], Jabor VAP[2], Souza GEP[2] [1]FMRP-USP – Farmacologia, [2]FCFRP-USP – Física e Química

04.044 **Dysregulation of the inflammatory response in pneumosepsis by early lipoxin A4 production**. Sordi R[1], Menezes-Lima-Júnior O[2], Horewicz V[3], Scheschowitsch K[1], Santos LF[1], Assreuy J[1] [1]UFSC – Pharmacology, [2]Fiocruz, [3]UFSC – Microbiology, Immunology and Parasitology

04.045 **Nocturnal melatonin priming endothelial cells by the modulation of NF-kB activation**. Marçola M, Tamura EK, Markus RP [1]IB-USP – Fisiologia

04.046 **Acute pancreatitis induced by caerulein causes important alterations inflammatory and functional in lung of the rat** . Morais CM[1], Silva LMN[1], Mendes WO[1], Costa MR[1], Xavier AF[1], Souza EP[2], Ribeiro RA[1], Souza MHLP[1], Criddle DN[3], Soares PMG[2] [1]UFC – Fisiologia e Farmacologia, [2]UFC – Morfologia, [3]University of Liverpool

04.047 **Evidence that adenosine and inosine acts in sinergism to exert its anti-inflammatory effects in acute pleural inflammation**. Lapa FR[1], Araújo G[2], Buss ZS[3], Fröde TS[3], Cabrini DA[1], Santos ARS[4] [1]UFPR – Farmacologia, [2]UFRN – Ciências Farmacêuticas, [3]UFSC – Ciências Farmacêuticas, [4]UFSC – Ciências Fisiológicas

04.048 **Hypertension favors the inflammatory process in rats with experimentally induced periodontitis**. do-Amaral CCF, Bonato CF, Belini L, Oliveira SHP FOA-Unesp-Araçatuba – Basic Sciences

04.049 **Mechanisms involved on increased nitric oxide synthesis in platelets of lipopolysaccahride-treated rats**. Lopes-Pires MA, Naime ACA, Anhê GF, Antunes E, Mendes CB, Marcondes S Unicamp – Farmacologia

04.050 **Hydrogen sulfide donors and their therapeutic potential as antipruritics and anti-inflammatory in mouse dorsal skin**. Rodrigues L, Ekundi-Valentim E, Florenzano J, Teixeira SA, Muscará MN, Costa SKP USP – Farmacologia

04.051 **LASSBio-897**, **a new *N*-acylhydrazone derivative**, **prevents house dust mite-induced lung inflammation and airways remodeling in a murine model of asthma**. Dalzy DV[1], Cardozo SVS[1], Anjos-Valotta EA[1], Barreiro EJ[2], Fraga CAM[2], Silva PMR[1], Martins MA[1] [1]IOC-Fiocruz – Inflammation, [2]UFRJ – Synthesis and Evaluation of Bioactive Substances – Pharmacy

04.052 **Acute effects of estradiol on lung and gut inflammation due to intestinal ischemic insult in male rats**. Breithaupt-Faloppa AC[1], Fantozzi ET[2], Romero DC[2], Rodrigues AS[2], Domingos HV[2], Oliveira-Filho RM[2], Vargaftig BB[2], Tavares-de-Lima W[2] [1]HC-FMUSP, [2]ICB-USP – Farmacologia

04.053 **Role of CCR2 in neutrophil articular infiltration in arthritis**. Talbot J[1], Bianchini FJ[1], Souto FOS[2], Nascimento DCB[1], Pinto LG[1], Peres RS[2], Oliveira RD[3], Almeida SL[3], Silva JR[2], Ferreira SH[1], Louzada-Junior P[3], Cunha TM[1], Cunha FQ[1], Alves-Filho JC[1] [1]FMRP-USP – Farmacologia, [2]FMRP-USP – Imunologia, [3]HC-FMRP-USP – Clínica Médica

04.054 **Protein fraction of *Calotropis procera latex* reduces mechanical hypernociception in mice**: **Involvement of NO and KATP channels**. Carmo LD[1], Luz PB[1], Pinheiro RSP[1], Freitas LBN[1], Aragão KS[1], Bitencourt FS[1], Alencar RN[1], Alencar NMN[1], Ramos MV[2] [1]UFC – Fisiologia e Farmacologia, [2]UFC – Bioquímica e Biologia Molecular

04.055 **Role of integrin alphaDß2 in the early phase of pulmonary inflammation caused by silica particles in mice**. Ferreira T[1], Carvalho V[1], Arantes ACS[1], Zimmerman G[2], Abreu A[3], Cordeiro RSB[1], Martins MA[1], Faria-Neto H[3], Silva P[1] [1]Fiocruz – Inflammation, [2]University of Utah – Human Molecular Biology and Genetics, [3]Fiocruz – Immunopharmacology

04.056 **Effect of ezetimibe on PLA2 inflammatory and catalytic activity**. Marangoni FA, Antunes E, De Nucci G, Landucci ECT Unicamp - Farmacologia

04.057 **Vanillic acid**, **an inhibitor of 5´-ectonucleotidase**, **attenuates plasma extravasation caused by *Bothrops alternatus* (Urutu) snake venom in rat skin**. Marcelino-Pereira E, Silva IRF, Hyslop S Unicamp – Farmacologia

04.058 **Meso-tetraarilporphyrins**: **photodynamic effect on human keratinocyte cell viability**. Carrenho LZB[1], Slomp A[1], Ló SMS[1], Ducatti DRB[2], Duarte MER[2], Noseda MD[2], Gonçalves AG[1], Cabrini DA[3], Barreira SMW[1], Otuki MF[4] [1]UFPR – Ciências Farmacêuticas, [2]UFPR – Bioquímica, [3]UFPR – Farmacologia, [4]UEPG – Ciências Farmacêuticas

04.060 **Sublingual ketorolac and sublingual piroxicam are equally effective for postoperative pain**, **trismus**, **and swelling management in lower third molar removal**. Senes AM[1], Gonçalves PZ[1], Melo AO[1], Santos CF[1] FOB-USP – Biological Sciences

05. Pain and Nociception

05.024 **Inhibition of gastrin-releasing peptide receptor is able to block acute and chronic scratching behavior in mice**. Machado GDB, Pereira PJS, Campos MM PUCRS – Toxicologia e Farmacologia

05.025 **Characterization of the effect of crotalphine in a CFA-induced arthritis model in female rats**. Lucena F[1], Bressan E[2], Cury Y[2], Tonussi CR[1] [1]UFSC – Farmacologia, [2]IBu

05.026 **Quercetin inhibits zymosan-induced articular inflammation in mice**: **Inhibition of oxidative stress and citokines production**. Zarpelon AC[1], Guazelli CF[1], Staurengo-Ferrari L[1], Casagrande R[2], Verri Jr WA[1] [1]UEL – Ciências Patológicas, [2]UEL – Ciências Farmacêuticas

05.027 **LASSBio-1247 antinociceptive effect**: **A new prototype drug candidate to treat rheumatoid arthritis**. Santos EAP, de Sá Alves FR, Fraga CAM, Barreiro EJ, Miranda ALP UFRJ – Fármacos

05.028 **The contribution of the transient receptor potential A1 (TRPA1) in a mice model of sympathetically maintained neuropathic pain**. Pinheiro KV[1], Pinheiro FV[1], Silva CR[2], Oliveira SM[2], Villarinho JG[1], André E[3], Ferreira J[1] [1]UFSM – Fisiologia e Farmacologia, [2]UFSM – Química, [3]UFRN – Biofísica e Farmacologia

05.029 **Effect of pregabalin in orofacial thermal hyperalgesia associated with experimental diabetes induced by streptozotocin in rats**. Nones CFM, Cunha JM, Chichorro JG UFPR – Farmacologia

05.030 **Anti-hyperagesic effects of two sphimgosine derivatives AA 2829 and OA 1028 in different models of hyperalgesia in mice**. Cavichioli FJ[1], Bernal GNB[1], Holzmann I[2], Klein JB[2], Escarcena R[3], Del Olmo E[3], San Feliciano A[3], Cechinel Filho V[2], Quintão NLM[2].

05.031 **Pyrrolidine dithiocarbamate inhibits superoxide anion-induced inflammation**. Ribeiro FAP, Fattori V, Zarpelon AC, Verri Jr WA UEL – Patologia

05.032 **Involvement peripheral but not central of α2-adrenoreceptors in the antinociception induced by aerobic exercise**. Galdino GS[1], Silva JF[2], Cruz JS[3], Brum PC[4], Duarte IDG[1], Perez AC[1] [1]UFMG – Farmacologia, [2]UFMG – Fisiologia, [3]UFMG – Bioquímica e Imunologia, [4]USP – Educação Física e Esporte

05.033 **Pharmacological properties of a new series of oxime ethers compounds designed as new anti-inflammatory drugs**. Castro JP[1], Motta NAV[1], Fumian MM[1], Veiga F[2], Veloso MP[2], Brito FCF[1] [1]UFF – Fisiologia e Farmacologia, [2]UNIFAL – Fitoquímica e Química Medicinal

05.034 **Interaction between kinin and endothelin systems in a nociception model in mice**. Schroeder SD[1], Luiz AP[2], Rae GA[1] [1]UFSC – Department of Pharmacology, [2]UFSC – Physiology

05.035 **Anti-nociceptive effect of citral in acute nociception models**: **Induced by formalin and plantar incision in mice**. Nishijima CM[1], Stramosk J[2], Mazzardo-Martins L[2], Martins D[2], Rocha LRM[1], Santos ARS[2], Hiruma-Lima CA[1] [1]Unesp-Botucatu – Fisiologia, [2]UFSC

05.036 **Characterization and initial evaluation of a clonidine**:**hydroxypropyl-beta-cyclodextrin complex**. Braga MA[1], Silva CMG[1], Leite MFMB[1], Yokaichiya F[2], de Menezes M[3], de Paula E[1] [1]Unicamp – Bioquímica, [2]Síncroton, [3]Medley Indústria Farmacêutica

05.037 **The role of neurotrophic factors NT-3 and NGF on orofacial thermal hyperalgesia induced by constriction of the infraorbital nerve in rats**. Reis RC, Nones CFM, Aguiar DA, Kopruszinski CM, Chichorro JG UFPR – Farmacologia

05.038 **Protein fraction of *Calotropis procera latex* reduces inflammatory pain in mice**: **Inhibition of neutrophil migration and oxidative stress**. Luz PB[1], Pinheiro RSP[1], Freitas LBN[1], Aragão KS[1], Bitencourt RS[1], Couto TS[1], Sousa TFG[1], Alencar NMN[1], Ramos MV[2] [1]UFC – Fisiologia e Farmacologia, [2]UFC – Bioquímica e Biologia Molecular

05.039 **Role of nitric oxide in the abdominal hyperalgesia in secretory phospholipase A2-induced pancreatitis**. Camargo E[1], Danielle DG[1], Silva CI[2], Teixeira SA[2], Toyama MH[3], Cotrim C[3], Landucci ECT[4], Muscará MN[2], Antunes E[4], Costa SKP[2] [1]UFS – Fisiologia, [2]USP – Pharmacology, [3]Unesp-São Vicente, [4]Unicamp – Pharmacology

05.040 **Investigation of the antinociceptive mechanisms of citronellyl acetate**. Rios ERV[1], Rocha NFM[1], Carvalho AMR[1], Vasconcelos LF[1], Dias ML[1], de Sousa DP[2], Sousa FCF[1], Fonteles MMF[1,3] [1]UFC – Fisiologia e Farmacologia, [2]UFS – Fisiologia, [3]UFC – Farmácia

05.041 **Evaluation of neuroprotective effect of duloxetine in induced neurotoxicity by the antineoplastic oxaliplatin in mice**. Pereira AF, Ribeiro ESSA, Moura CF, Neto CS, Oliveira FFB, Pontes RB, Ribeiro RA, Vale ML UFC – Fisiologia e Farmacologia

05.042 **Involvement of alpha1-adrenoceptors in the antinociceptive effect of tricyclic antidepressants in neuropathic pain**. Kauchi BAG, Rocha NP, Pupo AS Unesp – Farmacologia

05.043 **Antinociceptive effects of riparin II and its possible action mechanisms**. Carvalho AMR[1], Vasconcelos LF[1], Rocha NFM[1], Dias ML[1], Rios ERV[1], Bastos MVR[1], Barbosa Filho JM[2], Sousa FCF[1] [1]UFC – Fisiologia e Farmacologia, [2]UFPB – Tecnologia Farmacêutica

05.044 **Evaluation of the antinociceptive activity of terpinolene in mice and possible mechanisms of action**. Moura JB[1], Freitas FFBP[1], Lima DF[1], Brandão MS[1], De Castro Júnior JR[1], Sousa DP[2], Almeida FRC[1] [1]UFPI – Plantas Medicinais, [2]UFS – Farmácia

06. Cardiovascular and Renal

06.027 **Effects of the adipokine chemerin on the vascular reactivity**: **analysis in the rat aorta**. Neves KB[1], Lobato NS[2], Lopes RAM[3], Zanotto CZ[3], Filgueira FP[2], Tostes RC[3], Oliveira AM[1] [1]FCFRP-USP, [2]UFG, [3]FMRP-USP

06.028 **Functional characterization of the relaxation induced by the soluble guanylate cyclase activator**, **BAY 60-2770 in isolated pulmonary artery from rabbit**. Faria W, Caipisco JA, Antunes E, de Nucci G, Mónica FZ Unicamp – Farmacologia

06.029 **Involvement of RHO-A/RHO-KINASE pathway in the renal vascular hyperreactivity to vasopressin in endotoxemic shock**. Guarido KL, da Silva-Santos JE UFSC – Farmacologia

06.030 **Cyclic nucleotide modulators reduce vasoconstrictor**, **oxidative and inflammatory profile in Wistar rats fed hypercholesterolemic diet**. Motta NAV[1], Fumian MM[1], Castro J[1], Miranda ALP[2], Kümmerle AE[3], Barreiro EJ[2], Brito FCF[1] [1]UFF – Farmacologia Experimental, [2]UFRJ – Avaliação e Síntese de Substâncias Bioativas, [3]UFRRJ – Química

06.031 **Controlled delivery of vascular endothelial growth factor from polymeric microparticles induces tissue revascularization and positive heart remodeling in a rat myocardial infarction model**. Formiga FR[1,2], Pelacho B[3], Gavira JJ[3], Abizanda G[3], Prósper F[3], Blanco-Prieto MJ[1] [1]University of Navarra – Pharmacy and Pharmaceutical Technology [2]UPE – Biotecnologia, [3]University of Navarra – Hematology, Cardiology and Cell Therapy

06.032 **High salt intake increases the activity of the RhoA/RHO-kinase pathway in rat aorta and small mesenteric arteries**. Crestani S[1], Marques MCA[1], Webb RC[2], Da Silva-Santos JE[3] [1]UFPR – Farmacologia, [2]GHSU – Physiology, [3]UFSC – Farmacologia

06.033 **Chronic captopril treatment significantly attenuates erectile dysfunction in doca-salt hypertensive rats**. Neves NCV[1], Mendes HO[2], Damasceno EC[1], Felipe-Batista K[1], Guimarães HN[3], Rodovalho GV[2], Grabe-Guimarães A[1], Santos RAS[3], Leite R[1] [1]UFOP – Ciências Farmacêuticas, [2]UFOP, [3]UFMG

06.034 **Enhanced aorta reactivity after sepsis**: **Involvement of RHO kinase pathway**, **calcium sensitization and oxidative stress**. de Souza P[1], da Silva LM[1], Marques MCA[1], da Silva-Santos JE[2] [1]UFPR – Farmacologia, [2]UFSC – Farmacologia

06.035 **Characterizing a malnutrition model based on a high fat diet to study cardiovascular effects of molecules with therapeutic potential and nutraceuticals**. Miranda R[1], Marques EB[1], Oliveira GF[1], Rocha NN[2], Scaramello CBV[1] [1]UFF – Laboratório de Farmacologia Experimental, [2]UFF – Fisiologia e Farmacologia

06.036 **Does LASSBio1425 modulate cardiac and renal P-type ATPases in a diet-induced hypercholesterolaemia model?** Marques EB[1], Oliveira GF[1], Carvalho NPR[1], Fumian MM[1], Motta NAV[1], Maia RC[2], Barreiro EJ[2], Brito FCF[1], Scaramello CBV[1] [1]UFF –Farmacologia Experimental, [2]UFRJ – Avaliação e Síntese de Substâncias Bioativas

06.037 **The NADPH oxidase inhibitor apocynin ameliorates the erectile dysfunction in middle-aged rats**. Silva FH[1], Bau FR[1], Brugnerotto AF[2], Mónica FZT[1], Priviero FBM[1], Toque HA[1], Antunes E[1] [1]Unicamp – Farmacologia, [2]Unicamp – Hematologia e Hemoterapia

06.038 **Pharmacological induced sympathetic overactivity in ApoE deficient mice**: **Relationship between sympathetic hyperactivity**, **metabolic syndrome and atherosclerosis**. Nascimento AR[1], Doras C[2], Greney H[2], Niederhoffer N[2], Tibiriçá E[1], Bousquet P[2] [1]Fiocruz – Investigação Cardiovascular, [2]Université de Strasbourg – Neurobiologie et Pharmacologie Cardiovasculaire

06.039 **Histological characterization of nitric oxide synthesis after 6 months of the end of treatment**. De Paula DCC[1], Bianchini-Silva LS[1], Silva MDA[1], Carneiro C[1], Guimarães HN[2], Saúde-Guimarães DA[1], Grabe-Guimarães A[1] [1]UFOP – Farmácia, [2]UFMG – Engenharia Elétrica

06.040 **Antiplatelet and antithrombotic activity of new nitric oxide donors**: **E-CAOx and NTHF**. Santos PC[1], Maciel PMP[1], Assis VA[2], Queiroz TM[2], Pita JCR[2], Alustau MC[2], Furtado FF[3], Medeiros IA[1], Veras RC[1], Athayde Filho PF,[4] [1]DCF-CCS-UFPB, [2]CCS-UFPB, [3]ETSC-CFP-UFCG, [4]CCEN-UFPB

06.041 **The role of renin-angiotensin system and oxidative stress in development of experimental preeclampsia induced by L-NAME**. Amaral TAS[1], Carvalho LCRM[1], Ognibene DT[2], Rocha APM[3], Soares de Moura R[1], Resende AC[1] [1]UERJ – Farmacologia e Psicobiologia, [2]UEZO – Ciências Biológicas e da Saúde, [3]Unirio

06.042 **Oral administration of AVE-0991**, **a nonpeptide angiotensin(1-7) receptor agonist**, **facilitates erectile response in conscious and in anesthetized rats**. Felipe-Batista K[1], Costa-Gonçalves AC[2], Lopes IM[1], Neves NCV[1], Damasceno EC[1], Guimarães HN[3], Rodovalho GV[1], Grabe-Guimarães A[1], Santos RAS[2], Leite R[1] [1]UFOP – Farmácia, [2]ICB-UFMG, [3]UFMG – Engenharia

06.043 **Cardiovascular responses to *Bothrops atrox* venom in anesthetized rats**. Rodrigues MAP, Dial L, Neves RC, Brunieri LVP, Rennó AL, Stroka A, Hyslop S Unicamp – Farmacologia

06.044 **Cardiac alterations caused by *Lachesis Muta* (Bushmaster) snake venom in rat isolated perfused heart**. Dias L[1], Rodrigues MAP[1], Brunieri LVP[1], Rennó AL[1], Sousa NC[1], Stroka A[1], Melgarejo AR[2], Hyslop S[1] [1]Unicamp – Farmacologia, [2]IVB – Zoologia Médica

06.045 **Time course involvement of metaloproteinases and oxidative stress in the progression of renovascular hypertension-induced cardiac hypertrophy**. Rizzi E[1], Ceron CS[1], Guimarães DA[1], Prado CM[2], Rossi MA[2], Gerlach RF[3], Tanus-Santos JE[1] [1]FMRP-USP – Farmacologia, [2]FMRP-USP – Patologia, [3]FORP-USP – Morfologia, Estomatologia e Fisiologia

06.046 **Nebivolol attenuates the hypertrophic remodeling in the 2-kidney**, **1-clip model of renovascular hypertension**. Ceron CS[1], Rizzi E[2], Guimarães DA[2], Martins-Oliveira A[2], Gerlach RF[3] [1]USP – Farmacologia, [2]USP – Farmacologia, [3]USP – Morfologia e Estomatologia

06.047 **Vascular hyporesponsiveness to vasoconstrictors**: **The involvement of no reservoirs**. Benedet PO, Ramos GC, Assreuy J UFSC – Farmacologia

06.048 **Contractile response induced by phenylephrine is modulated by eNOS phosphorylation and by hydrogen peroxide production in renal hypertensive rat aorta**. Silva BR[1], Pernomian L[1], Grando MD[2], Bendhack LM[2] [1]FMRP-USP, [2]FCFRP-USP

06.049 **The vascular relaxation induced by the nitric oxide donor and cyclooxygenase inhibitor compound (NCX2121) is potentiated by the endothelium**. Paula TD[1], Silva BR[2], Bendhack LM[1] [1]FCFRP-USP – Physics and Chemistry, [2]FMRP-USP – Pharmacology

06.050 **Role of B1 kinin receptor and nitric oxide in arterial coronary reactivity of angiotensin II hypertensive rats**. Ceravolo GS[1,2], Soares AG[1], Silva MA[2], Tostes RC[1], Fortes ZB[1], Carvalho MHC[1] [1]USP – Farmacologia, [2]UEL – Fisiologia

06.051 **Rats with heart failure induced by myocardial infarction display erectile dysfunction *in vivo***. Rodrigues FL, Doi MG, Tostes RC, Carneiro FS FMRP-USP – Pharmacology

06.052 **Functional cardiac analysis in endotoxemic rats**: **Gender-linked differences**. Gonçalves RPM, Guarido KL, Assreuy J, da Silva-Santos JE UFSC – Farmacologia

08. Respiratory, Urinary and Reproductive

08.001 **Impact of early exposure to air pollutant in the innate response to allergic insult in mice**. Santos KT[1], Florenzano J[1], Peron JPS[2], Teixeira SA[1], Câmara NOS[2], Muscará MN[1], Costa SKP[1] [1]ICB-USP – Farmacologia, [2]ICB-USP – Imunologia

08.002 **Nitric oxide and cyclooxygenase products are key factors in the antispasmodic effect of glucagon on airway smooth muscle contraction *in vivo***. Insuela DBR, Daleprane JB, Almeida RR, Arantes ACS, Cordeiro RSB, Silva PMR, Martins MA, Carvalho VF Fiocruz – Inflamação

08.003 **Long-term treatment of BAY 60-2770**, **a soluble guanylate cyclase activator**, **prevents lower urinary tract dysfunctions induced by obesity**. Alexandre EC, Leiria LOS, Silva FH, Calixto MC Monica, FZ, Antunes E FCM–Unicamp – Farmacologia

08.004 **Increased prostate smooth muscle contractions and reduced beta-adrenoceptor-mediated signal transduction in chronic Nitric Oxide (NO) deficiency model**. Calmasini FB, Leiria LOS, Pissinatti L, Bau FR, Antunes E Unicamp –Pharmacology

08.005 **The renin-angiotensin system (RAS) plays a major role in the voiding dysfunction of ovariectomized rats**. Ramos-Filho ACS[1], De Almeida Faria J[1], Teixeira SA[2], Mónica FZT[1], Calmasini FB[1], De Nucci G[1], Muscará MN[2], Anhê GF[1], Antunes E[1] [1]Unicamp – Pharmacology, [2]ICB-USP – Pharmacology.

08.006 **Effect of multifactorial malnutrition in rat vas deferens**: **Modulation of Ca^{2+}-ATPase by calmodulin**. Bezerra CGP[1], Souza AB[1], Muzi-Filho H[1], Einicker Lamas M[1], Vieyra A[2], Lara LS[1], Nascimento VM[1] [1]ICB-UFRJ –Farmacologia Celular e Molecular, [2]UFRJ – Biofísica

08.007 **Impairment of insulin-induced PI3-KINASE/AKT/ENOS pathway in urothelium as a cause of obesity-associated detrusor overactivity**. Leiria LOS, Sollon C, Kinote A, Bau FR, Mónica FZT, Anhê GF, Antunes E Unicamp – Farmacologia

08.008 **Epidermal growth factor receptor play important role in the spontaneous contractions of the cauda epididymis in castrated male adult rats**. Agati LB[1], Kiguti LR[2], Godinho RO[1], Avellar MCW[1] [1]Unifesp – Pharmacology, [2]IBB-Unesp –Pharmacology,

08.009 **Evaluation of ionic substitution on [^{3}H]-noradrenaline release in rabbit isolated corpus cavernosum**. Rodrigues RL, Mónica FZT, Antunes E, De Nucci G FCM-Unicamp – Farmacologia

08.010 **Ultrastructure and functional anatomy of the hemipenis of *Crotalus durissus terrificus***. Pissinatti L[1], Porto M[1,2], Oliveira MA[1,3], Rojas-Moscoso JA[1], Cogo JC[3], Metze K[4], Antunes E[1], Nahoum C[1], Mónica FZT[1], de Nucci G[1,5] [1]FCM-Unicamp – Pharmacology, [2]IBMR, [3]Univap – Research and Development, [4]FCM-Unicamp – Pathology, [5]ICB-USP – Pharmacology

08.011 **Activation of NO/GMPc/PKG pathway by histamine modulates the noradrenaline induced contraction in rat testicular capsule**. Silva Junior ED, Rodrigues JQD, Jurkiewicz A, Jurkiewicz NH Unifesp – Farmacologia

08.012 **Pharmacological characterization of bronchial smooth muscle function in middle aged rats**. Bau FR, Silva FH, Mónica FZT, Antunes E, De Nucci G Unicamp – Farmacologia

09. Natural Products and Toxinology

09.041 **Antibacterial activity and cytotoxicity induced by derivatives nitrocompounds *in vitro***. Santos DC, Souza KGS, Mendonça LCV, Vale JKL, Borges RS, Monteiro MC UFPA –Microbiologia e Imunologia Clínica

09.042 ***Passiflora incarnata* treatment during gestation and lactation**: **Toxicity and antioxidant evaluation in Wistar dams**. Boll KM[1], Bortolasci CC[2], Veríssimo LF[3], Zaminelli T[3], Bacchi AD[3], Higachi L[2], Barbosa DS[4], Moreira EG[3] [1]HU-UEL – Farmácia, [2]UEL – Ciências da Saúde, [3]UEL – Ciências Fisiológicas, [4]UEL – Patologia

09.043 **Mechanisms underlying the vasorelaxant action of ethanolic extract of *Mandevilla moricandiana* (Apocynaceae) leaves in rat aorta**. Ferreira LLDM, Paes BM, Gomes MVS, Konno TUP, Muzitano MF, Raimundo JM UFRJ

09.044 **Vasodilatory activity of ethanolic extract of *Kielmeyera membranacea casar* (Clusiaceae) leaves and its mechanism of action in the rat aorta**. Paes BM, Ferreira LLDM, Souza PBN, Konno TUP, Guimarães DO, Muzitano MF, Raimundo JM – UFRJ

09.045 **Effect of β-pinene obtained from *Citruslatifolia tanaka* essential oil on neutrophil *in vitro* chemotaxis**. Kummer R, Silva FM, Estevão-Silva CF, Ritter AMV, Rocha BA, Arruda LLM, Grespan R, Cuman RKN UEM – Farmacologia e Terapêutica

09.046 **Cardiotoxic effects of microcystin–LR in mouse isolated hearts**. Siqueira-Lece F[1], Ricardo HD[1], Tomaz MA[1], Machado MM[1], Tavares SM[1], Strauch MA[1], Silva-Gonçalves T[1], Azevedo SM[2], Soares RM[2], Melo PA[1] [1]ICB-CCS-UFRJ – Farmacologia das Toxinas, [2]ICF-CCS-UFRJ – Ecofisiologia e Toxicologia das Cianobacterias,

09.047 **Anticonvulsant and sedative effects of hydroethanolic extract of *Himatanthus drasticus* Mart. stem bark**. Pinto BAS[1], Flister KFT[2], Machado KRG[3], França LM[4], Moraes DFC[1], Borges ACR[2], Paes AMA[2], Olea RSG[3] [1]UFMA – Farmácia, [2]UFMA – Ciências Fisiológicas, [3]UFMA – Química

09.048 **Isobrucein B, a quassinoid from *Picrolemma sprucel* Hook. f., reduces the release of proinflammatory cytokines and nitric oxide from mouse macrophages: Possible effect by inhibition of NF-kB activation**. Silva RL[1], França RFO[1], Lopes AH[1], Vieira SM[2], Amorim RCN[3], Cunha FQ[1], Pohlit AM[3], Cunha TM[1] [1]FMRP-USP – Pharmacology, [2]INPA –Health Sciences, [3]INPA – Natural Products

09.049 **Hypotensive effect induced by alcohol free-lyophilized red wine garziera (GASH) from Vale do São Francisco in different models of hypertension**. Luciano MN[1], França-Silva MS[2], Ferreira-Costa HG[1], Braga VA[2], Medeiros IA[2] [1]UNIVASF – Farmacologia Experimental, [2]UFPB – Biotecnologia

09.050 **Comparison of the effects of betulinic acid and sibutramine on leptin and ghrelin levels in animals with obesity induced for high calorie diet**. Araújo VM[1], Melo CL[1], Melo TS[1], Ferreira JM[1], Oliveira GP[1], Dantas MB[1], Meneses RRC[1], Rao VS[2], Pessoa ODL[3], Queiroz MGR[1] [1]UFC – Análises Clínicas e Toxicológicas, [2]UFC – Fisiologia e Farmacologia, [3]UFC – Química Orgânica e Inorgânica

09.051 **Proteolytic fraction from *Vasconcellea cundinamarcensis* latex shows antitumoral effect and alters leukocytes properties in an inflammatory tumor microenvironment**. Braga AD[1], Santos VG[1], Oliveira-Lima OC[2], Marques SM[2], Salas CE[3], Andrade SP[2], Carvalho-Tavares J[2], Lopes MTP[1] [1]UFMG – Farmacologia, [2]UFMG – Fisiologia e Biofísica, [3]UFMG – Bioquímica e Imunologia

09.052 **Relaxing and contractile effects of *Pereskia grandifolia* Haworth (Cactaceae) in vascular and non-vascular smooth muscles of rats**. Silva TLC[1], Maba IK[1], Souza P[1], Crestani S[1], Kazama CC[2], Gasparotto Junior A[2], Silva-Santos JE[3] [1]UFPR – Farmacologia, [2]UNIPAR – Farmacologia, [3]UFSC – Farmacologia

09.053 **Analgesic and anti-inflammatory effect of ethyl acetate fraction of methanolic extract of leaves of *Rheedia longifolia* Planch & Triana**. Nascimento DD[1], Calheiros AS[1], Siqueira AM[1], Souza CZ[1], Azeredo JA[1], Bérenger ALR[2], Figueiredo MR[2], Frutuoso VS[1] [1]IOC-Fiocruz – Imunofarmacologia, [2]Fiocruz – Produtos Naturais

09.054 **Antispasmodic evaluation of *Lippia microphylla* CHAM. (Verbenaceae) on rat ileum**. Santos MS[1], Jacinto KR[2], Rigoni VLS[3], Tavares JF[4], Nouailhetas VLA[5], Silva JLV[1] [1]Uninove – Farmácia-Bioquímica, [2]Uninove – Ciências da Reabilitação, [3]Uninove / Unifesp/Biofísica, [4]UFPB – Ciências Farmacêuticas, [5]Unifesp – Biofísica

09.055 **Standard *Hypericum perforatum* extract inhibits Ehrlich tumor cells-induced in mice**. Corrêa M, Calixto-Campos C, Zarpelon AC, Casagrande R, Verri Jr WA UEL – Patologia

09.056 **Central effects of aqueous extract of the leaves of *Passiflora edulis f. flavicarpa* in mice**. Lima LA[1], Ayres ASJ[1], Rachetti VPS[1], Zucolotto SM[2], Gavioli EC[1] [1]UFRN – Biofísica e Farmacologia, [2]UFRN – Farmácia

09.057 **Determination of leishmanicidal activity, with a possible mechanism of action and cytotoxicity from reduced silver nanoparticles (AgNPs) with resin of *Anacardium occidentale* L.** Lima DS[1], Rodrigues KAF[1], Amorim LV[1], Quelemes PV[2], Oliveira JMG[1], Carvalho FAA[3], Mendonça RZ[4], Leite JRSA[2] [1]UFPI – Medicinal Plants, [2]UFPI –Biodiversity and Biotechnology, [3]UFPI – Bioquímica e Farmacologia, [4]IBu – Parasitology

09.058 **Phytochemical and pharmacological studies of *Mandevilla moricandiana* (Apocynaceae)**. Gomes MVS, Leal LA, Mello RJ, Ferreira LLDM, Raimundo JM, Konno TUP, Leal ICR, Muzitano MF UFRJ

09.059 **Effects of latex proteins from *Calotropis procera* on the irinotecan-induced intestinal mucositis**. Bitencourt FS[1], Aragão KS[1], Luz PB[1], Alencar RN[1], Lima-Júnior RCP[1], Ramos MV[2], Ribeiro RA[1], Alencar NMN[1] [1]UFC – Fisiologia e Farmacologia, [2]UFC – Bioquímica e Biologia Molecular

09.060 **Effects of *Salvia officinalis* L. essential oil on *in vivo* and *in vitro* leukocytes migration**. Nogueira de Melo GA[1], Grespan R[2], Fonseca JP[2], Farinha TO[2], Silva EL[2], Bersani-Amado CA[2], Cuman RKN[2] [1]UEM – Análises Clínicas e Biomedicina, [2]UEM – Farmacologia

09.061 **Inhibitory effect of eugenol on experimental model of collagen-induced arthritis**. Grespan R[1], Paludo M[1], Aguiar RP[1], Silva EL[2], Bersani-Amado CA[1], Cuman RKN[1] [1]UEM – Pharmacology and Therapeutics, [2]UEM – Chemistry

09.062 **Contractile activity of *Lachesis muta* (Bushmaster) venom in rat ileum and stomach**. Stroka A[1], Dias L[1], Rodrigues MAP[1], Brunieri LVP[1], Rennó AL[1], Sousa NC[1], Melgarejo AR[2], Hyslop S[1] [1]Unicamp – Farmacologia, [2]IVB – Zoologia Médica

09.063 **Histological evaluation of brain in adult offspring of mothers treated with scorpion venom *Tityus bahiensis* during the lactation period**. Martins AN, Nencioni ALA, Dorce VAC IBu – Farmacologia

09.064 **Diuretic activity and hypotensive effect of a butanolic fraction of *Scutia buxifolia* in normotensive and spontaneous hypertensive rats**. Silva RCMVAF[1], Crestani S[2], De Souza P[2], Boligon AA[3], Athayde ML[3], Gasparotto Junior A[4], Marques MCA[2], da Silva-Santos JE[5] [1]UFPR – Farmacologia, [2]UFPR, [3]UFSM, [4]UNIPAR, [5]UFSC

09.065 **Synthesis of lapachol analogues using Suzuki-Miyaura coupling methodology and evaluation of the antiophidic activity**. Strauch MA[1], Gomes SLS[2], Machado MM[1], Cruz JMT[1], Silva AJ[2], Costa PRR[2], Melo PA[1] [1]UFRJ – Farmacologia e Química Medicinal, [2]UFRJ – Produtos Naturais

09.066 **Evaluation of subchronic toxicity of the biofilm acetylated of manioc starch (BIOAC) in Wistar rats**. Jesus DR[1], Espanhol CAA[2], Prando TBL[2], Sabatini DR[2], Lourenço ELB[3], Gasparotto Junior A[1] [1]UNIPar – Ciência Animal, [2]UNIPar – Farmácia, [3]UNIPar/UFPR – Farmácia/Farmacologia

09.067 **Evaluation of *in vitro* antibacterial and antifungical activity of crude extract and fractions of *Harpagophytum procumbens*.** Schaffer LF[1], Denardi LB[2], Mario DAN[2], Boligon AA[1], Athayde ML[2], Wagner C[1], Alves SH[2], Fachinetto R[1] [1]UFSM – Farmacologia, [2]UFSM – Ciências Farmacêuticas

09.068 **Different effects of bothropstoxin I and II on NA^+/K^+-ATPase and CA^{2+}-ATPase from type serca of murine fast-twitch muscle extensor digitorum longus**. Ayres RO, Feijó PR, Tomaz MA, Melo PA, Cunha VMN, Quintas LEM ICB-UFRJ – Farmacologia e Química Medicinal

09.069 **Inhibition of the intracellular Ca^{2+} stores and of the $Ca2^+$ sensitization in the vasorelaxant effect induced by geraniol**. Feitoza PR[1], Fraga BP[2], Cunha PS[2], Araújo AAS[2], Nunes RS[2], Marchioro M[2], Medeiros IA[3], Santos MRV[2], Ribeiro EAN[1] [1]ESENFAR-UFAL, [2]UFS – Fisiologia, [3]UFPB – Tecnologia Farmacêutica

09.070 **Investigate the role of the sympathetic nervous system in the bradycardic and hypotensive response induced by the alpha-terpineol in spontaneously hypertensive rats**. Tenorio EP[1], Ferreira AKB[1], Alves JC[1], Sabino CKB[2], Ferreira Filho ES[2], Oliveira AP[2], Ribeiro EAN[1] [1]ESENFAR-UFAL, [2]UFPI – Plantas Medicinais

09.071 **Antimicrobial activity *in vitro* of ethanolic extract of stem of *Maytenus erythroxylon* in pathogenic bacteria**. Lucena KL[1], Frade ADS[2], Duarte MC[3], Farias RLGP[1], Nascimento JS[1] [1]UFPB – Fisiologia e Patologia, [2]FCM-PB, [3]UFPB – Biotecnologia

09.072 **Participation of glutamatergic system in the effects of a toxin isolated from *Tityusserrulatus* scorpion venom**. Freitas MM[1], Nencioni ALA[1], Lebrun I[2], Dorce VAC[1] [1]IBu – Farmacologia, [2]IBu – Bioquímica e Biofísica

09.073 **Study of alterations on isolated rat kidney promoted by different concentrations of *Bothropoides lutzi* venom**. Sousa DF[1], [1]Jorge, ARC, [2]Borges-Nojosa DM, [1]Ferreira JM, [3]Queiroz MGR, [1]Bindá AH, [3]Martins AMC, [4]Menezes, DB, [1]Monteiro HAS. [1]UFC – Fisiologia e Farmacologia, [2]UFC – Biologia, [3]UFC – Análises Clínicas e Toxicológicas, [4]UFC – Patologia e Medicina Legal,

09.074 **Involvement of the nitric oxide pathway in endothelium-dependent vasorelaxation induced by 5,7,4'-trimethoxyflavone in isolated rat superior mesenteric arteries**. Oliveira Filho AA[1], Dias LMA[1], Alustau MC[1], Assis KS[1], Assis TJC[1], Furtado FF[2], Queiroz TM[1], Machado NT[1], Fernandes HMB[1], Maia GLA[1], Barbosa Filho JM[1], Medeiros IA[1] [1]UFPB – Ciências da Saúde, [2]UFCG – SAÚDE

09.075 **Effects of *Hypericum perforatum* on vacuous chewing movements induced by fluphenazine in rats**. Reis EM[1], Busanello A[2], Reckziegel P[1], Leal CQ[3], Figueira FH[2], Fachinetto R[1] [1]UFSM – Farmacologia, [2]UFSM – Bioquímica Toxicológica, [3]UFSM – Farmácia

09.076 **Effect of cinnamic acid esters on lipid metabolism of animals fed hypercholesterolemic diet**. Damasceno DV[1], Arruda-Filho ACV[1], Melo TS[1], Pereira NBS[1], Holanda RTM[1], Sousa DF[2], Freitas AMP[1], Queiroz MGR[1], Vieira IGP[3], Guedes MIF[4] [1]UFC – Análises Clínicas e Toxicológicas, [2]UFC – Fisiologia e Farmacologia, [3]PADETEC-UFC, [4]UECE – Nutrição

09.077 **Effects of *Bauhinia forficata* on locomotor activity and vacuous chewing movements induced by haloperidol in rats**. Leal CQ[1], Peroza LR[2], Busanello A[2], Fachinetto R[3] [1]UFSM – Farmácia, [2]UFSM – Bioquímica Toxicológica, [3]UFSM – Farmacologia

09.078 **The involvement of oxidative stress in chronic toxicity induced by fumonisin B1 in broilers chicks**. Poersch AB[1], Trombetta F[1], Braga ACM[1], Boeira SP[1], Perlin VJ[2], Dilkin P[3], Marchioro A[3], Oliveira MS[3], Mallmann CA[3], Furian AF[1] [1]UFSM – Fisiologia e Farmacologia, [2]SAMITEC, [3]UFSM – LAMIC

09.079 **Cytotoxic effect of *Bothropsjararacussu* venom in renal tubular cells (LLC-PK1) and antagonism by heparin**. Cruz JMT[1], Amaral LS[1], Strauch MA[1], Espindola-Netto JM[1], Machado MM[1], Ricardo HD[1], Melo PA[1], Quintas LEM[1] [1]ICB-CCS-UFRJ – Farmacologia e Química Medicinal

11. Clinical Pharmacology, Pharmacokinetics, Pharmacogenomics and Preclinical Toxicology

11.001 **Development and characterization of multilamellar liposome pyridostigmine containing**. Souza ACM[1], Neves NCV[1], Botacim WE[1], Frézard FJG[2], Souza J[1], Grabe-Guimarães A[1], Silva-Barcellos N M[1] [1]UFOP – DEFAR, [2]UFMG – Fisiologia e Biofísica

11.002 **Behavioral pharmacological screening and acute toxicity of biofilm acetylated of manioc starch (BIOAC)**. Jesus DR[1], Espanhol CAA[2], Prando TBL[2], Sabatini DR[2], Gomes C[3], Lourenço ELB[4], Gasparotto Junior A[1] [1]UNIPAR – Ciência Animal, [2]UNIPAR – Farmácia, [3]UFPR, [4]UNIPAR/UFPR – Farmácia

11.003 **High performance liquid chromatography method for determination of gemifloxacin in lung, liver and kidney (microdialisates) of rats**. Pires CC[1], Grünspan LD[1], Lauriano JV[2], Araújo BV de[2], Tasso L[1] [1]UCS, [2]UFRGS

11.004 **Assessment of *in vitro* and *in vivo* recovery of gemifloxacin using microdialysis**. Grünspan LD[1], Pires CC[1], Laureano JV[2], Araújo BV de[2], Tasso L[1] [1]UCS, [2]UFRGS

11.005 **Do renal disease and carvedilol association modulate digoxin pharmacokinetic in patients with heart failure?** Souza FC, Baptista TM, Neri JS, Gomes JPM, Oliveira GF, Nascimento TA, Scaramello CBV UFF – Farmacologia Experimental

11.006 **Evaluation of subchronic toxicity of tyramine in rats**. Morais TMF[1], Rodrigues HG[1], Dantas MB[1], Damasceno DV[1], Freitas AMP[1], Meneses RRC[1], Sousa DF[2], Oliveira GP[1], Oliveira KS[1], Queiroz MGR[1] [1]UFC – Análises Clínicas e Toxicológicas, [2]UFC – Fisiologia e Farmacologia

11.007 **Toxicity of *Tropaeolum majus* L. in critical periods of pregnancy in Wistar rats**. Lourenço ELB[1], Muller JC[2], Boareto AC[2], Gomes C[2], Lourenço AC, Minatovicz B[2], Gasparotto Junior A[3], Martino-Andrade AJ[4], Dalsenter PR[2] [1]Unipar/UFPR – Farmácia/Farmacologia, [2]UFPR – Farmacologia, [3]Unipar – Ciência Animal, [4]UFPR – Fisiologia

11.008 **Molecular profile of the men1 gene in multiple endocrine neoplasia type 1, clinical aspects and response to the pharmacological treatment: A case study**. Pinheiro DP[1], Quidute ARP[2], Fontenele EGP[2], Rocha DR[3], Sousa MR[2], Moraes MO[1] [1]UFC – Fisiologia e Farmacologia, [2]HUWC-UFC, [3]ICC-HHJ

Poster Session 3 – Friday 09/11/2012

01. Cellular and Molecular Pharmacology

01.034 **The cardiotonic steroid bufalin induces endocytosis and promotes change in LLC-PK1 cells morphology**. Martins-Ferreira J, Cunha-Filho GA, Quintas LEM, Nöel FG ICB-UFRJ

01.035 ***In vitro* cytoxicity of benzoquinoline isolated from *Mitracarpus baturitensis* (Rubiaceae)**. Costa MP[1], Bomfim IS[1], Cavalcanti BC[1], Rodrigues FAR[1], Albuquerque MRJR[2], Santos HS[2], Bandeira PN[2], Souza EB[2], Muniz FL[2], Moraes MO[1], Pessoa C[1] [1]UFC – Fisiologia e Farmacologia, [2]UVA – Química/Biologia

01.036 ***In vitro* effects of kinin receptors on glioma cell proliferation**. Erig TC[1], Nicoletti NF[2], Campos MM[3,4], Morrone FB[1,2,4] [1]PUCRS – Farmácia, [2]PUCRS – Biologia Celular e Molecular, [3]FO-PUCRS, [4]PUCRS – Toxicologia e Farmacologia

01.037 **Contribution of the extracellular cyclic AMP- adenosine pathway to dual coupling of β2-adrenoceptors to Gs and Gi proteins in mouse skeletal muscle**. Duarte T, Menezes-Rodrigues FS, Godinho RO Unifesp – Pharmacology

01.038 **Influence of age on the responsiveness of vas deferens from Wistar rats stimulated by adrenergic and purinergic agonists**. Peña MG, Miranda-Ferreira R, Caricati-Neto A, Jurkiewicz NH, Jurkiewicz A Unifesp – Farmacologia

01.039 **Pharmacologic evaluation of LASSBio-998 analogues designed as p38 inhibitors**. Guimarães JPD, Berto-Júnior C, Soares RA, Lopes RO, Barreiro EJ, Souza AM, Lima LM LASSBio-FF-UFRJ

01.040 **Lipoxin A4 inhibits mediators releasing in mouse mesothelial pleural cells stimulated with *Mycobacterium bovis* (BCG)**. Candea ALP, Menezes-Lima-Júnior O, Henriques MGMO Fiocruz – Farmacologia Aplicada

01.041 **Impact of systemic administration of bacterial endotoxin on vascular permeability and inflammatory genes in the rat epididymis**: **modulation by glucocorticoids**. Pinto T, Denadai-Souza A, Honda L, Avellar MCW Unifesp – Farmacologia

01.042 **ATL-1**, **a synthetic analog of 15-epi-lipoxin A4**, **modulates key function of tumor-associated macrophage**: **A potential anti-tumoral tool**. De Brito NM, Simões RL, Fierro IM, Barja-Fidalgo TC UERJ – Biologia celular

01.043 **Snakebites envenomation and alternative serotherapy by camelid nanobodies**. Prado NDR[1], Pereira SS[1], Morais MSS[1], Silva SCG[1], Braum DT[2], Pereira da Silva LH[1], Soares AM[1,3], Stabeli RG[1,3], Fernandes CF[1,2] [1]Fiocruz, [2]Cepem, [3]CEBIO-UNIR

01.044 **Analysis of protein-protein interaction by yeast two-hybrid system in the search of protein partners for sperm associated antigen 11 C isoform**. Pelosi PAJ[1], Ribeiro CM[1], Luz JS[1,2], Avellar MCW[1] [1]Unifesp – Pharmacology, [2]FCFAr-UNESP-

01.045 **Anti-tyrosinase**, **anti-collagenase and cytotoxic activity of Kojic acid derivatives**. Pedrosa TN[1], Carvalho ASC[2], Santos AS[2], Lima ES[1], Vasconcellos MC[1] [1]UFAM, [2]UFPA

01.046 **Testosterone induces vascular smooth muscle cells apoptosis by mechanisms involving activation of caspase 3 and caspase 8**. Lopes RAM[1], Chignalia A[2], Neves KB[3], Zanotto CZ[1], Pestana C[3], Curti C[3], Tostes RC[1] [1]FMRP-USP, [2]InCor-HC-FMUSP, [3]FCFRP-USP

01.047 **Effects of the *Bothrops moojeni* venom (VBm) on the integrity and viability of endothelial Cells (EC)**. Zamuner SF[1], Adamo KB[1], Figueiredo TCS[1], Zamuner SR[1], Teixeira CFP[2] [1]Uninove –Ciências da Reabilitação, [2]IBu – Inflamação

01.048 **Ontogeny of the SPAG11C expression in male rat**: **could it be involved in Wolffian duct morphogenesis?** Ribeiro CM, Queiróz DBC, Silva EJR, Denadai-Souza A, Avellar MCW Unifesp – Endocrinologia Experimental

01.049 **Ouabain stimulates rat sertoli cell proliferation through ERK1/2 pathway**. Lucas TF[1], Amaral LS[2], Porto CS[1], Quintas LEM[2] [1]Unifesp – Farmacologia, [2]ICB-UFRJ

01.050 **The role of HO-1 on the adipogenic development of murine bone marrow-derived mesenchymal stem cells**. Vargas da Silva S[1], Quirino AS[1], Gonçalves R[1], Renovato Martins M[1], Citelli M[2], Simões RL[1], Pereira CR[1], Barja-Fidalgo TC[1] [1]UERJ – Biologia Celular, [2]UERJ – Nutrição

02. Neuropharmacology

02.031 **Neuroinflammatory profile ANS astrocytic morphology in chronic cyclosporine treated rats**. Cararo MM[1], Souza DG[2], Andreotti DZ[1], Rodrigues L[3], Lima LS[1], Achaval M[3], Portela LV[2], Souza DO[2], Scavone C[1], Böhmer AE[1] [1]USP – Farmacologia, [2]UFRGS – Bioquímica, [3]UFRGS – Ciências Morfológicas

02.032 **Evaluation of epileptic seizures and neurotrophic factors production induced by intrahippocampal microinjection of pilocarpine in C57BL/6 mice**. Lima IVA[1], Campos AC[2], Miranda AS[2], Moraes MFD[3], Teixeira AL[2], de Oliveira ACP[1] [1]ICB-UFMG – Pharmacology, ICB, [2]UFMG – Tropical Medicine and Infection Disease, [3]ICB-UFMG – Physiology and Biophysics

02.033 **Repeated caffeine administration by oral or intraperitoneal routes prevents working memory deficits in the intranasal MPTP rat model of Parkinson's disease**. Wopereis S[1], Rial D[1], Moreira ELG[2], Bertoglio LJ[1], Prediger RD[1] [1]UFSC – Farmacologia, [2]UFSC – Neurociências

02.034 **Relationship between thresholds to convulsions induced by a benzodiazepine inverse agonist and glutamatergic receptors in membranes of brain regions**. Conto MB, Carvalho JGB, Venditti MAC Unifesp – Psicobiologia,

02.035 **Effects of cannabidiol on hippocampal neurodegeneration and neurogenesis after transient**, **global cerebral ischemia in mice**. Schiavon AP[1], Soares LM[1], Milani H[1], Guimarães FS[2], Oliveira RMMW[1] [1]UEM – Farmacologia e Terapêutica, [2]FMRP-USP – Farmacologia

02.036 **Evaluation of neurotransmitters involved in the anxiolytic and panicolytic effect of the aqueous extract guaraná in the T-maze**. Rangel M[1], Mello JP[2], Audi EA[1] [1]UEM – Pharmacology and Therapeutic, [2]UEM – Pharmacy

02.037 **Effects of atorvastatin treatment and withdrawal on Na^+, K^+-ATPase activity**. Funck VR, Grigoletto J, Oliveira CV, Pereira LM, Oliveira MS UFSM – Fisiologia e Farmacologia

02.038 **Behavioral and neurochemical alterations produced by the standardized extract of *Myracodroun urundeuva* (Aroeira-do-Sertão) in an experimental model of Parkinson disease**. Calou IBF[1], Lopes MJP[2], Siqueira RMP[1], Pinto NB[1],

Rodrigues DL[2], Tavares AF[2], Uchoa MMA[2], Gonçalves DO[1], Tavares KR[1], Viana GSB[1] [1]UFC – Fisiologia e Farmacologia, [2]Estácio – FMJ

02.039 Influence of neonatal handling on amphetamine-conditioned place preference of young rats. Antoniazzi CTD, Boufleur N, Dolci GS, Kuhn FT, Benvegnú DM, Pase CS, Roversi K, Roversi K, Dias VT, Bürger ME UFSM

02.040 Effect of creatine on spatial and non-spatial retention memory in rats. De Castro M, Souza MA, Gerbatin R, Busanello GL, Fiorin FS, Royes LF UFSM – Bioquímica do Exercício

02.041 Influence of different fatty acids supplementation on the vulnerability of the 1st generation of rats to develop an animal model of mania. Trevizol F[1], Roversi K[2], Dias VT[2], Roversi K[2], Barcelos RCS[1], Benvegnú DM[1], Kuhn FT[1], Bürger ME[1] [1]UFSM – Farmacologia, [2]UFSM – Fisiologia e Farmacologia

02.042 Caffeine effects on antioxidant status and behavioral parameters altered by a pentylenetetrazol challenge. Busanello GL, Souza MA, Rodrigues FS, Gerbatin R, de Castro M, Fiorin FS, Scherer L, Royes LF UFSM – Métodos e Técnicas Desportivas

02.043 Extinction of fear memory: **on the participation of different neuromodulatory systems in the hippocampus**, **basolateral amygdala and ventromedial prefrontal cortex**. Fiorenza NG[1,2], Rosa J[2], Izquierdo I[1], Myskiw JC[4,1] [1]INNT-PUCRS, [2]UFRGS – Medicine and Health Sciences, PUCRS, [4]IGG – PUCRS

02.044 Beta-amyloid peptide modulates NOS and Na,K-ATPase activities in rat hippocampus. Vasconcelos AR[1], Lima LS[1], Böhmer AE[1], Andreotti DZ[1], Yshii LM[1], Russo LC[2], Ferro ES[2], Munhoz CD[1], Scavone C[3], Kawamoto EM[4] [1]ICB-USP – Pharmacology, [2]ICB-USP – Cell and Developmental Biology, [3]ICB-USP, [4]ICB-USP – Pharmacology –Neurosciences / NIA

04. Inflammation

04.061 *Marcgraviaceae*-originated compounds reduce DENV-2 *in vitro* infection and MIF production in a human hepatocyte cell line (HUH-7). Fialho LG[1], Lima Júnior RS[1], da Silva VP[2], Torrentes-Carvalho A[1], Mello C[1], Corrêa G[1], Figueiredo MR[2], Kubelka CF[1] [1]IOC-Fiocruz, [2]ITF-Fiocruz

04.062 Zymosan injected into air pouches of rats induces fever dependent on prostaglandins but not on neural pathways. Marquiafável FS[1], Malvar DC[2], de Melo MCC[1], Souza GEP[1] [1]FCFRP-USP – Física e Química, [2]FMRP-USP – Farmacologia

04.063 Down-modulation of activated human neutrophil by LMW-Fucoidan. Frony AC[1], Moraes JA[1], Boisson-Vidal C[2], Barja-Fidalgo TC[1] [1]UERJ – Biologia Celular, [2]INSERM

04.064 IL-22 modulates IL-17A production and controls inflammation and tissue damage in experimental dengue infection. Marques RE[1], Guabiraba R[1], Besnard AG[2], Conceição TM[3], Da Poian AT[3], Souza DG[4], Ryffel B[2], Teixeira MM[1] [1]ICB-UFMG – Bioquímica e Imunologia, [2]Université d'Orléans – Molecular and Experimental Immunology and Neurogenetics, [3]IBqM-UFRJ, [4]ICB-UFMG – Microbiologia

04.065 Molecular features of anemia and type 2 diabetes. Faria TF[1], Silva SV[2], Barja-Fidalgo TC[2], Citelli M[3] [1]UERJ – Nutrição, [2]UERJ – Biologia Celular, [3]UERJ – Nutrição Básica e Experimental

04.066 Evaluation of anti-inflammatory activity of α-phellandrene *in vivo* and *ex vivo* models. Siqueira HSS[1], Sousa-Neto BP[1], Sousa GA[1], Rocha FTA[1], Amorim LV[1], Rodrigues KAF[1], Oliveira FA[1], Oliveira RCM[1], Sousa DP[2] [1]NPPM-UFPI, [2]UFS – Química

04.067 N-acetylcysteine prevents and reverses the inhibitory effect of *in vivo* lipopolysaccharide on platelet aggregation. Anjos DJ, Silverio-Mendes CB, Bonfitto PHL, Antunes E, Marcondes S Unicamp – Farmacologia

04.068 The activity of phenolic acid derivates from methanol extract of anacardiaceae family in acute airway allergic inflammation. Cavalher-Machado SC[1], Noenta-Lima NR[1], Rosas EC[1], Silva JD[2], Rocco PRM[2], Henriques MGMO[1] [1]Fiocruz – Farmacologia Aplicada, [2]IBCCF-UFRJ – Investigação Pulmonar

04.069 The anti-inflammatory effects of methyl ursolate derived from ursolic acid apple peel (*Malus domestica* Borkh.). Padua TA[1], Abreu BSSC de[1], Rosas EC[1], Siani AC[1], Nakamura MJ[1], Valente LMM[2] [1]ITF-FIOCRUZ, [2]UFRJ – Química

04.070 Carbon nanotubes induce acute and chronic lung inflammation but little fibrogenic effects. Lima BHF[1], Lopes GAO[1], Russo RC[2], Teixeira MM[1] [1]UFMG – Bioquímica e Imunologia, [2]UFMG – Fisiologia e Biofísica

04.071 Involvement of prostaglandins and substance P on zymosan induced febrile response. Bastos-Pereira AL, Fraga D, Zampronio AR UFPR – Farmacologia

04.072 Effect of mangiferin on pulmonary function and remodeling in a murine model of asthma. Vieira AB, Athar CVA, Cotias AC, Pão CRR, Serra MF, Martins PMRS, Martins MA IOC-Fiocruz – Inflammation

04.073 CCR5 expression on neutrophils plays a protective role during experimental sepsis. Castanheira FVS, Sônego F, Kanashiro A, Czaikoski PG, Cunha TM, Alves-Filho JC, Cunha FQ USP-FMRP – Farmacologia

04.074 Role of prophylactic antibiotic treatment in severe acute pancreatitis. Soares FS[1], Horewicz V[2], Menin A[2], Spiller F[1] [1]UFSC – Farmacologia, [2]UFSC – Microbiologia, Imunologia e Parasitologia

04.075 Periodontitis impairs acetylcholine-induced relaxation of rat mesenteric arteries. Jesus FN[1], Wenceslau CF[2], Couto GK[2], Costa SKP[1], Rossoni LV[2], Muscará MN[1] [1]ICB-USP – Farmacologia, [2]ICB-USP – Fisiologia e Biofísica

04.076 Selective TNF-alpha inhibition with infliximab prevents inflammation but not diarrhea in irinotecan-induced intestinal mucositis. Pereira VBM[1], Lima-Júnior RCP[1], Figueiredo AA[1], Leite CAVG[1], Wong DVT[1], Pereira STA[1], Aragão KS[1], Bem AXC[1], Oriá RB[2], Magalhães PJC[1], Brito GAC[2], Souza MHLP[1], Ribeiro RA[1] [1]UFC – Physiology and Pharmacology, [2]UFC – Morphology

04.077 Insulin resistance mediates the exacerbate airway inflammatory response in obese sensitized mice. Calixto MC[1], Lintomen L, André DM[1], Leiria LOS[1], Ferreira DS[1], Landgraf RG[2], Anhê GF[1], Antunes E[1] [1]Unicamp – Farmacologia, [2]Unifesp – Ciências Biológicas

04.078 Lack of effect on MAP kinase phosphatase-1 expression underlies dexamethasone refractoriness in a murine model of asthma. Pão CRR, Serra MF, Cotias AC, Daleprane JB, Jurgilas PB, Couto GC, Anjos-Valotta EA, Cordeiro RSB[1], Silva PMR[1], Martins MA[1] [1]Fiocruz – Fisiologia e Farmacodinâmica

04.079 **The effect of *Aedes aegypti* salivary gland on immune response induced by viral particles in model *in vitro*.** Gomes RS, Navegantes KC, Monteiro MC UFPA – Farmácia

04.080 **Reactive oxygen species-dependent inflammasome activation mediates irinotecan-induced mucositis through the control of IL-1B and IL-18 release**. Arifa RDN[1], Madeira MFM[1], De Paula TP[1], De lima RL[1], Fagundes CT[1], Tavares LD[1], Rachid MA[2], Riffel B[3], Teixeira MM[4], Souza DG[1] [1]UFMG – Microbiologia, [2]UFMG – Patologia, [3]Université d´Orléans / CNRS, [4]UFMG – Bioquímica

04.081 **Effects of caffeinated and decaffeinated coffee in the inflammatory alterations associated to obesity in mice**. Caria CRP, Acedo SC, Rocha T, Gambero A UFS – Clinical Pharmacology and Gastroenterology

04.082 **Pharmacokinetics of ropivacaine in drug delivery systems**. Papini JZB[1], Pinheiro M[1], Calafatti SA[1], Pedrazzoli J[1], Araújo DR[2], De Paula E[3], Cereda CMS[3], Tofoli GR[1] [1]Universidade São Francisco, [2]UFABC, [3]Unicamp

04.083 **Pipecolyl xylidide**, **a non anesthetic analogue of bupivacaine**, **inhibits allergen-induced lung inflammation and airways hyperreactivity in a murine model of difficult to treat asthma**. Cotias AC[1], Serra MF[1], Pão CRR[1], Couto GC[1], Olsen PC[1], Pires ALA[1], Costa JCS[2], Cordeiro RSB[1], Silva PMR[1], Martins MA[1] [1]Fiocruz – Fisiologia e Farmacodinâmica, [2]IOC

04.084 **ß-caryophyllene**, **a CB2 receptor agonist**, **ameliorates cyclophosphamide induced cystitis in rats**. Dornelles FN, Andrade EL, Bento AF, Calixto JB UFSC – Depto de Farmacologia

04.085 **Severity of irinotecan-induced small intestinal mucositis is regulated by the TLR9 pathways**. Avila TV[1], Arifa RDN[1], de Paula TP[1], Costa VV[1], Cisalpino D[1], Ferraz FO[2], Madeira MFM[1], Teixeira MM[2], Souza DG[1] [1]UFMG – Microbiologia, [2]UFMG – Imunologia

04.086 **Dominant-negative inhibitor of soluble TNF XPro 1595 suppresses experimental silicosis in mice**. Ciambarella BT[1], Arantes ACS[1], Trentin PG[1], Szymkowski DE[2], Martins MA[1], Silva PMR[1] [1]Fiocruz – Fisiologia e Farmacodinâmica, [2]Xencor

04.087 **PI3K**, **ERK 1/2 and P38 pathways inhibited by hydrogen peroxide in the antigen-induced arthritis in mice**. Lopes F[1], Gonçalves W[1], Amaral F[2], Sousa LP[2], Teixeira M[2], Pinho V[1] [1]UFMG – Morfologia, [2]UFMG – Bioquímica

04.088 **Suppressive effect of the flavonoid quercetin on lung inflammation caused by silica particles in mice**. Lima YOA, Ferreira TPT, Arantes ACS, Martins MA, Silva PMR IOC-FIOCRUZ – Inflammation

05. Pain and Nociception

05.045 **Dynamic weight bearing for evaluation of articular pain in mice models**. Quadros AU, Pinto LG, Cunha FQ, Ferreira SH, Cunha TM FMRP-USP – Farmacologia

05.046 **Involvement of serotonergic receptors in the antinociceptive activity of riparin III**. Vasconcelos LF[1], Carvalho AMR[1], Rocha NFM[1], Rios ERV[1], Dias ML[1], Barbosa Filho JM[2], Sousa FCF[1] [1]UFC – Fisiologia e Farmacologia, [2]UFPB – Tecnologia Farmacêutica

05.047 **Synergism between L-tryptophan and dipyrone in animal models of nociception**. Rocha NFM, Rios ERV, Carvalho AMR, Dias ML, Vasconcelos LF, Sousa FCF UFC – Fisiologia e Farmacologia

05.048 **Investigation of antinociceptive effect of riparin IV**: **Role of transient potential receptors (TRP)**. Dias ML[1], Carvalho AMR[1], Rios ERV[1], Rocha NFM[1], Vasconcelos LF[1], Barbosa Filho JM[2], Sousa FCF[1] [1]UFC – Fisiologia e Farmacologia, [2]UFPB – Tecnologia Farmacêutica

05.049 **Antyhyperalgesic effect of N-antipirino-3-chloro-4-(4-bromoanilinomaleimida) in persistent models of pain in mice**. Silva GF, Buzzi FC, Correa R, Cechinel Filho V, Quintão NLM NIQFAR-CCS-UNIVALI

05.050 **LASSBio-1135**: **a multi-target compound**, **orally effective in a model of neuropathic pain**, **acts as a TRPV1 antagonist**, **TRPA1 agonist and also reduces cytokine production**. Lima CKF[1], Yekkirala AS[2], Sprague JM[2], Lacerda RB[1], Barreiro EJ[1], Fraga CAM[1], Cunha TM[3], Woolf CJ[2], Miranda ALP[1] – [1]LASSBio-ICB-UFRJ – Desenvolvimento de Fármacos, [2]Harvard Medical School – Neurobiology, Neurobiology, [3]FMRP-USP – Farmacologia

05.051 **Antialgic effect of dipyrone metabolites**. Assis DCR[1], Malvar DC[1], Vaz ALL[2], Melo MCC[2], Clososki GC[2], Souza GEP[2] [1]FMRP-USP – Farmacologia, [2]FCFRP-USP – Física e Química

05.052 **Investigation of the mechanisms involved in pronociceptive action of spinal activation of NOD2 that account for the genesis of neuropathic pain**. Ferreira DW[1], Santa-Cecília FV[1], Cunha FQ[1], Ferreira SH[1], Zamboni DS[2], Cunha TM[1] – [1]FMRP-USP – Farmacologia, [2]FMRP-USP – Biologia Celular e Molecular e Bioagentes Patogênicos

05.053 **Role of peripheral H1 histamine receptors in the knee-joint inflammation induced by carrageenan in rats**. Fin FE, Stein TS, Souza-Silva E, Tonussi CR UFSC – Farmacologia

05.054 **Antinociceptive effect of inosine involves direct interaction with adenosine A1 receptors**. Macedo-Junior SJ[1], Nascimento FP[1], Luiz-Cerutti M[2], Borges FR[2], Córdova MM[2], Dutra R[1], Pamplona FA[1], Constantino L[3], Tasca CI[3], Reid A[4], Sawynok J[4], Calixto JB[1], Santos ARS[2] [1]UFSC – Farmacologia, [2]UFSC – Ciências Fisiológicas, [3]UFSC – Bioquímica, [4]Dalhousie University – Pharmacology

05.055 **Effect of LED in the inflammatory hyperalgesia induced by *Bothrops moojeni* snake venom**. Nadur Andrade N[1], Toniolo EF[2], Dale CS[2], Zamuner SR[1] [1]Uninove – Ciências da Reabilitação, [2]IEP-HSL

05.056 **Pharmacotherapy for painful crisis in sickle cell disease in patients admitted to the General Hospital in the north of Espírito Santo State**. Sabino MF, Nascimento TD, Nascimento LCN DCS-CEUNES

05.057 **LASSBio-1473 AND LASSBio-1474**: **Sulfonyl-hydrazones derivatives with anti-inflammatory activity and effective on neuropathic pain**. Santos BLR[1], Lima CKF[1], da Silva LL[1], D'Andrea ED[2], Lima LM[1], Barreiro EJ[1], Miranda ALP[1] [1]UFRJ – Farmácia, [2]UFRJ

05.058 **H1 receptor agonist inhibits Mast cell migration and degranulation in the knee-joint of rats**. Mascarin LZ, Souza-Silva E, Tonussi CR UFSC – Farmacologia

05.059 **Antinociceptive activity of the monoterpene α-phellandrene in rodents**: **possible mechanisms of action**. Lima DF[1], Brandão MS[1], Moura JB[1], Leitão JMSR[1], Carvalho FAA[1], Miura LMCV[2], Leite JRSA[2], Sousa DP[3], Almeida FRC[1] – [1]UFPI – Medicinal Plants, [2]UFPI – Biodiversity and Biotechnology, [3]UFS – Pharmacy

05.060 **Anti-inflammatory and analgesic effects of hydrogen sulfide donors are not mediated by ATP-sensitive K^+ (KATP) channels**. Ekundi-Valentim E[1], Mesquita FPN[1], Rodrigues L[1], Santos KT[1], Moreira D[1], Teixeira SA[1], Belizário JE[1], Munhoz CD[1], Wallace JL[2], Muscará MN[1], Costa SK[1] [1]ICB-USP – Farmacologia, [2]McMaster University

05.061 **Nonpeptidergic C fibers mediate inflammatory hypernociception in mice**. Pinto LG, Souza GR, Lopes AHP, Talbot J, Santos MD, Cunha FQ, Cunha TM, Ferreira SH – FMRP-USP – Farmacologia

05.062 **Evaluation of the antihyperalgesic potential of bioactive chalcones on several models of long-lasting pain in mice**. Rocha LW[1], Klein JB[2], Sonza DR[2], Campos-Buzzi F[3], Silva KABS[4], Quintão NLM[3] [1]Unicamp – Fisiologia, [2]UNIVALI – Farmacologia, [3]UNIVALI, [4]FURB

05.063 **The blockade of spinal cord receptor Y1 reversed the hyponociception caused by H1 Agonist but not trypsin in the rat knee-joint**. Souza-Silva E, Stein TS, Tonussi CR UFSC – Farmacologia

05.064 **Involvement of transient receptor potential ankirin 1 (TRPA1) in the persistent scratching behavior induced by diphenilciclopropenone (DCP) in mice**. Segat GC, Costa R, Manjavachi MN, Calixto JB UFSC – Farmacologia

05.065 **NOD1 and NOD2 contribute to pain hypersensitivity after induction of peripheral neuropathy**. Santa-Cecília FV, Ferreira DW, Ferreira SH, Zamboni DS, Cunha TM[1] FMRP-USP – Farmacologia

05.066 **Antinociceptive mechanism of action of N-acylhydrazone derivative LASSBio-1476**. Silva RV[1], Lima CKF[1,2], Nogueira MCO[1], Barreiro EJ[1], Miranda ALP[1] [1]LASSBio-UFRJ – Farmácia, [2]ICB

06. Cardiovascular and Renal

06.053 **Mechanism of action of the total poison *Apis mellifera* in ring of isolated aorta**. Rodrigues FA[1], Sousa PCP[1], Brito TS[1], Sousa DF[1], Magalhães PJC[1], Toyama MH[2], Costa PHS[1], Monteiro HSA[1], Havt A[1] [1]UFC – Physiology and Pharmacology, [2]UNESP – Biochemistry

06.054 **Reduced cardiovascular alterations of arthemeter loaded in pcl nanocapsules**. Vidal-Diniz AT[1], Andrade RS[1], Guimarães HN[2], Grabe-Guimarães A[1], Mosqueira VCF[1] [1]Cipharma-UFOP, [2]UFMG – Engenharia Elétrica

06.055 **Effects of the hydroalcoholic extract of *Euterpe oleracea* Mart (açaí) on glucose metabolism and oxidative damage in C57BL/6 mice fed a high fat diet**. Oliveira PRB[1], Costa CA[1], Rocha APM[2], Bem GF[1], Amaral TAS[1], Cordeiro VSC[1], Carvalho LCRM[1], Conceição EPS[3], Soares de Moura R[1], Resende AC[1] [1]UERJ – Farmacologia e Psicobiologia, [2]UNIRIO, [3]UERJ – Fisiologia

06.056 **Role of inducible nitric oxide synthase in the pathophysiology of experimental preeclampsia**. Amaral LM[1], Palei AC[2], Pinheiro LC[1], Sertorio JT[3], Guimarães DA[1], Portella RL[1], Tanus JE[1] [1]FMRP-USP – Pharmacology, [2]University of Mississippi – Physiology and Biophysics, [3]FCM-Unicamp – Pharmacology

06.057 **NTHF**: **An organic nitrate with cardiovascular action without tolerance induction**. Furtado FF[1], Veras RC[2], Silva TAF[2], Queiroz TM[3], Alustau MC[3], Machado NT[3], Oliveira-Filho AA[3], Santos AF[3], Athayde-Filho PF[3], Medeiros IA[2] [1]CFP-ETSC-UFCG, [2]DCF-CCS-UFPB, [3]CCS-UFPB

06.058 **Vascular effects of spironolactone in an experimental model of type 2 diabetes mellitus**. Silva MAB[1], Cau SBA[1], Lopes RAM[1], Bruder-Nascimento T[1], Manzato CP[1], Touys RM[2], Tostes RC[1] [1]FMRP-USP – Pharmacology, [2]ICAMS-University of Glasgow

06.059 **Impaired *in vitro* reactivity of corpus cavernosum of rats exposed to high-sodium diet**. Leitolis A, Linder AE, da Silva-Santos JE UFSC – Farmacologia

06.060 **Renal and cytotoxic effects promoted by venom total of snake *Bothrops pauloensis.*** Marinho AD, Jorge RJB, Morais ICO, Jorge ARC, Menezes RRPPB, Martins AMC, Monteiro HSA UFC – Fisiologia e Farmacologia

06.061 **Orchidectomy enhances the expression of endothelin-1 and ET_B receptors in rat portal vein**. Rossignoli PS[1,2], De Labio RW[3], Payão SLM[3], Pereira OCM[1], Chies AB[2] [1]IB-USP – Pharmacology, [2]FAMEMA – Pharmacology, [3]FAMEMA – Genetics

06.062 **The effect of exercise on microvascular rarefaction and hypertension in rats under long-term high-fat-diet**. Machado MV[1], Vieira AB[2], Nascimento A[1], Conceição FG[1], Santos S[1], Bonomo I[1], Lessa MA[1], Tibiriçá E[1] – [1]IOC-Fiocruz – Cardiovascular Investigation, [2]IOC-Fiocruz – Laboratory of Inflammation

06.063 **Atorvastatin and sildenafil attenuate the 2K1C-hypertension-induced MMP-2 upregulation through antioxidant effects**. Guimarães DA[1], Rizzi E[1], Ceron CS[1], Martins-Oliveira A[1], Gerlach RF[2], Tanus-Santos JE[1] [1]FMRP-USP – Farmacologia, [2]FORP-USP – Morfologia, Estomatologia e Fisiologia

06.064 **Does "protein diet" modulate cardiac and renal P-type ATPases in female Wistar rats?** Silva RM[1], Marques EB[1], Oliveira GF[1], Fernandes WO[1], Felberg MFS[1], Massucati-Negri M[1], Azeredo VB[2], Marostica E[1], Scaramello CBV[1] [1]LAFE-UFF Physiology and Pharmacology, [2]UFF – Nutrition and Dietetics

06.065 **A new nitric oxide donor induces relaxation of mesenteric resistance artery from normotensive and hypertensive 2K-1C rats**. Andrade FA[1], Restini CBA[2], da Silva RS[3], Bendhack LM[3] [1]FMRP-USP – Pharmacology, [2]UNAERP – Medicine, [3]FCFRP-USP – Physics and Chemistry

06.066 **LASSBio-1425 – Antiatherogenic and anti-inflammatory activity of a new phtalimide derivate**. Fumian MM[1], Motta NAV[1], Maia RC[2], Barreiro EJ[2], Brito FCF[1] [1]LAFE-UFF – Fisiologia e Farmacologia, [2]LASSBio-UFRJ – Fármacos

06.067 **Renal effects of *Calotropis procera* protein fraction**. Costa PHS, Monteiro MCSA, Jorge RJB, Monteiro SMN, Jorge ARC, Alves NTQ, Clementino MAF, Fonseca MRB, Monteiro HSA, Alencar NMN UFC – Physiology and Pharmacology

06.068 **"Protein diet" and vascular dysfunction**: **possible mechanisms**. Fernandes WO[1], Massucati-Negri M[1], Felberg MFS[1], Alfradique VAP[1], Boaventura GT[2], Azeredo VB[2], Marostica E[1] [1]UFF – Fisiologia e Farmacologia, [2]UFF – Nutrição e Dietética

06.069 **Influence of acute swimming exercise in relaxing response of the aorta in Wistar rat**. Brito AF[1], Souza ILL[2], Pereira JC[2], Carreiro JN[2], Silva AS[1], Silva BA[3] [1]DEF-CCS-UFPB, [2]CCS-UFPB, [3]DFP-CCS-UFPB

06.070 **Acute stress of restraint alters the vascular reactivity in rats and promotes anxiogenic effect**. Carda APP[1], Gonzaga NA[2], Padovan CM[3], Tirapelli CR[4] [1]EERP-USP, [2]FMRP-USP– Farmacologia, [3]FFCLRP-USP – Psicologia, [4]EERP-USP – Enfermagem Psiquiátrica e Ciências Humanas

06.071 **Generation and characterization of spontaneously immortalized endothelial cell from mice**. Loiola RA[1], Torres T[1], Landgraf M[2], Landgraf R[1], Pesquero JL[3], Fernandes L[1] [1]Unifesp – Biologia Química, [2]USP – Imunologia, [3]Unifesp – Biofísica

06.072 **Hemodynamic effects of recombinant human matrix metalloproteinase-2 in anesthetized lambs**. Ferraz KC[1], Rizzi E[2], Sousa-Santos O[2], Neto-Neves EM[2], Muniz JJ[1], Gerlach RF[3], Tanus-Santos JE[2] [1]FCM-Unicamp – Pharmacology, [2]FMRP-USP – Pharmacology, [3]FORP-USP – Morphology, Stomatology and Physiology

06.073 **Pyrimidine *N*-acylhydrazone derivatives – LASSBio-1088 and LASSBio-1277 – exert vasodilatory activity by different mechanisms**. Rocha SO, Lopes AB, Silva LL, Barreiro EJ, Fraga CAM, Miranda ALP LASSBio-FF-UFRJ

06.074 **Influence of the route of administration on the hemodynamic**, **electrocardiographic and blood gas responses to *Bothrops jararacussu* (Jaracuçu) venom in anesthetized rats**. Neves R[1], Rodrigues MAP, Dias L, Brunieri LVT, Hyslop S Unicamp – Farmacologia

06.075 **Involvement of muscarinic pathway in the cardiovascular effects of ayahuasca tea**. Moura MTD[1], Costa CDF[1], Herculano EA[1], Netto SM[2], Ribeiro EAN[1] [1]ESENFAR-UFAL, [2]Unifesp – Psicobiologia

06.077 **A new model for adenine-induced chronic renal failure in mice**, **and the effect of gum acacia treatment thereon**: **Comparison with rats**. Ali BH[1], Al-Za´abi M[1], Waly M[2], Beegam S[1], Al-Lawati I[1], Al- Salam S[3], Nemmar A[4] [1]CMHS-Sultan Qaboos University – Pharmacology and Clinical Pharmacy, [2]CMHS-Sultan Qaboos University – Food Sciences, [3] CMHS-Sultan Qaboos University – Pathology, [4]CMHS-Sultan Qaboos University – Physiology

06.078 **Effect of chronic treatment with apocynin on arterial pressure**, **heart rate and *in vivo* responses to acetylcholine and to phenylephrine in spontaneously hypertensive rats (SHR)**. Antoniali C[1], Perassa LA[1], Lima MS[2], Potje SR[1], Graton ME[3], Munhoz FC[1], Callera JC[1] [1]FOA-UNESP – Basic Sciences, [2]UNIP-Araçatuba – Pharmacy, [3]UniSALESIANO – Pharmaceutical Sciences

07. Endocrine and Gastrointestinal

07.011 **Hypoglycemic activity of betulinic acid in mice with alloxane-induced diabetes**. Freitas AMP[1], Dantas MB[1], Araújo VM[1], Morais TMF[1], Melo TS[1], Pereira NBS[1], Rodrigues HG[1], Maia AIV[2], Pessoa ODL[3], Queiroz MGR[1] [1]UFC – Análises Clínicas e Toxicológicas, [2]UFC – Química Orgânica e Inorgânica, [3]UFC – Química Orgânica e Inorgânica

07.012 **Protective effects of protein isolated from latex *Himatanthus drasticus* (MART.) *Plumel* (APOCYNACEAE) in mice gastric mucosa against injury induced by ethanol**: **involvement of NO/$_C$GMP/K_{ATP}**. Souza TFG[1], Marques LM[1], Pinheiro RSP[1], Freitas LBN[1], Luz PB[1], Carmo LD[1], Alencar NMN[1], Matos MPV[2], Ramos MV[2] [1]UFC – Fisiologia e Farmacologia, [2]UFC – Bioquímica e Biologia Molecular

07.013 **Involvement of oxide nitric pathway**, **K_{ATP} CHANNELS and $TRPV_1$ receptors in NaHS-induced pyloric sphincter relaxation in mice**. Lucetti LT[1], Medeiros J-VR[2], Santana APM[1], Carvalho ACS[1], Tavares BM[1], Soares PMG[3], Ribeiro RA[1], Souza MHLP[1], Cunha FQ[4] [1]UFC – Physiology and Pharmacology, [2]UFPI – Biology, [3]UFC – Morphology, [4]USP – Pharmacology

07.014 **Experimental outcomes of endogenous H2S in rats with acute pancreatitis evoked by secretory phospholipase A2 from *Crotallus durissus terrificus* (Cdt) venom**. Zanoni CIS, Rodrigues L, Ekundi-Valentim E, Teixeira SA, Muscará MN, Costa SKP ICB-USP

07.015 **The Role of TRPV1 Receptors and GMPc in gastroprotective effect of β-ionone in models of acute gastric lesion**. Olinda TM[1], Freitas LBN[1], Pinheiro RSP[1], Luz PB[1], Marques LM[1], Osório CBH[1], Couto TS[1], Carmo LD[1], Souza TFG[1], Sousa DP[2], Alencar NMN[1] [1]UFC – Fisiologia e Farmacologia, [2]UFS

07.016 **Effect of nitrosyl-ruthenium on gastric inflammation model in mice – role of the cGMP-KATP pathway**. Santana APM[1], Torres JNL[1], Tavares BM[1], Medeiros J-VR[2], Lucetti LT[1], Gomes AS[3], Soares PMG[3], Carvalho ACS[1], Silva FON[4], Lopes LGF[4], Ribeiro RA[1], Souza MHLP[1] [1]UFC – Physiology and Pharmacology, [2]UFPI – Biology, [3]UFC – Morphology, [4]UFC – Organic and Inorganic Chemistry

07.017 **Evaluation of gastroprotective activity of the ethanolic extract from *Pilosocereus gounellei*.** Sousa GA[1], Rocha FTA[1], Sousa-Neto BP[1], Freitas FFBP[1], Souza MFV[2], Oliveira FA[1] [1]NPPM-UFPI, [2]UFPB – Tecnologia Farmacêutica

07.018 **Irinotecan induces intestinal electrolyte secretion**, **bacterial translocation and toll-like receptor 4 activation during intestinal mucositis in mice**. Wong DVT[1], Bem AXC[1], Costa ELF[1], Noronha FJD[1], Freire RS[1], Brito GAC[2], Souza MHLP[1], Carvalho CBM[3], Lima-Júnior RCP[1], Lima AAM[1], Ribeiro RA[1] [1]UFC – Physiology and Pharmacology, [2]UFC – Morphology, [3]UFC – Pathology

07.019 ***Lactobacillus acidophilus* reverts gastric dysmotility and the inflammation present in intestinal mucositis induced by 5-fluorouracil in mice**. Justino PFC[1], Silva LMN[1], Melo LFM[1], Nogueira AF[1], Xavier AF[1], Souza EP[2], Souza MHLP[1], Ribeiro RA[1], Soares PMG[2] [1]UFC – Fisiologia e Farmacologia, [2]UFC – Morfologia

07.020 **Proliferative effect of alanyl-glutamine after *in vitro* rat intestinal cells injury promoted by enteroaggregative *Escherichia coli* (EAEC)**. Freitas REM[1], Silva VA[1], Cavalcante PA, Prata MMG, Lima IFN, Quetz JS, Lima AAM, Havt A UFC – Physiology and Pharmacology

09. Natural Products and Toxinology

09.080 **Evaluation of anti-inflammatory activity of the basil *(Ocimum americanum L)* essential oil in the zymozan-induced arthritis model**. Yamada AN[1], Grespan R[2], Silva-Filho SE[2], Damião MJ[2], Estevão-Silva CF[3], Kummer R[2], Pinho RJ[2], Bersani-Amado CA[2], Cuman RKN[2] [1]UEM – Pharmacology and Therapeutic, [2]UEM – Pharmacology and Therapeutic, [3]UEM – Pharmacology and Therapeutic

09.081 **Evaluation of the cytokines levels in embryos of mothers treated with *Tityus bahiensis* scorpion venom during the pregnancy**. Dorce ALC[1], Freitas LA[1,2], Fusco CBP[1], Frare EO[1], Dorce VAC[1], Nencioni ALA[1] [1]IBu – Farmacologia, [2]IBu – Toxinology

09.082 **Acute and subchronic toxicological evaluation of hydroalcoholic extract of *Hibiscus rosa sinensis* L. leaves**. Barroso WA, Benevides ROA, Chagas VT, Melo DNS, Sousa AKA, Vieira DA, Silva KP, Ribeiro NLX, França LM, Castro AS, Silva SN, Paes AMA, Câmara AL UFMA – Ciências Fisiológicas

09.083 **The mechanism of action of the vasodilator effect of *Cecropia glaziovi* Sneth. Extract**. Lobo KL[1], Santos TC[2], Battisti MA[2], Campos AM[2], Linder AE[1] [1]UFSC – Pharmacology, [2]UFSC – Pharmaceutical Sciences

09.084 **The monoterpene (-)-borneol elicits hypotensive effect in normotensive rats**. Silva-Filho JC[1], Ferreira Filho ES[2], Maynard LG[1], Cavalcanti SCH[1], Quintas-Junior L[1], Santos MRV[1], Oliveira RCM[2], Oliveira AP[2] [1]NPPM-UFS – Fisiologia/, [2]NPPM-UFPI, [3]UFS – Fisiologia

09.085 **α-lipoic acid reverses the oxidative process induced by DDS-NOH metabolite in erythrocytes *in vitro***. Santos DC, Albuquerque RFV, Malcher NS, Monteiro MC UFPA

09.086 **Gastroprotective effects of ethanol extract and fractions of *Neoglaziovia variegata* Mez. (Bromeliaceae) against gastric lesions induced by ibuprofen and ethanol in mice**. Viana AFSCV[1], Machado FDF[1], Silva FV[1], Lima JT[2], Oliveira FA[1], Freitas FFBP[1], Oliveira RCM[1], Almeida JRGS[2] [1]NPPM-UFPI, [2]UNIVASF – Ciências Farmacêuticas

09.087 **The gastroprotective effects of *Eugenia dysenterica* DC leaf extract in mice: The possible role of tannins**. Prado LCS, Mundin AMM, Ferraz CR, Canabrava HAN, Bispo-da-Silva LB UFU – Pharmacology

09.088 **Antiophidic property of *Cordia salicifolia* and *Lafoensia pacari* plants extracts against effects induced by *Philodryas olfersii* and *Bothrops jararacussu* venoms in neuromuscular preparation**. Schezaro-Ramos R[1], Góes MP[1], Collaço RCO[2], Cogo JC[3], Dal Belo CA[4], Rodrigues-Simioni L[2], Moreira AS[5], Randazzo-Moura P[6] [1]UNIP – Farmácia, [2]Unicamp – Farmacologia, [3]CEN-UNIVAP, [4]Unipampa, [5]ICS-UNIP, [6]PUC – Ciências Fisiológicas

09.089 **Antinociceptive properties of extracts and fractions from the leaves of *Spilanthes oleracea* in mice**. Rodrigues MRA[1], Kanazawa LKS[1], Neves TLM[1], Nomura EO[1], Cipriani TR[2], Nascimento AM[2], Baggio CH[1], Werner MFP[1] [1]UFPR – Farmacologia, [2]UFPR – Bioquímica

09.090 **Blood pressure responses to *vitalius dubius* (Araneae, Theraphosidae) spider venom**. Tamascia ML, Silva IRF, Alves-Jr MJ, Hyslop S Unicamp – Farmacologia

09.091 **Diuretic effect of semi-purified fractions obtained from *Achillea millefolium* L. (Asteraceae) in rats**. Maba IK[1], Silva TLC[1], De Souza P[1], Crestani S[1], Gasparotto Junior A[2], Marques MCA[1], Silva-Santos JE[3] [1]UFPR – Farmacologia, [2]UNIPar – Farmacologia, [3]UFSC – Farmacologia

09.092 **Resveratrol inhibits the oxidation of hemoglobin induced DDS-NOH metabolite *in vitro* model**. Albuquerque RFV, Santos DC, Malcher NS, Monteiro MC UFPA

09.093 **Evaluation of acute toxicity of hydroalcoholic extract of the seeds of *Vatairea guianensis* (Aublet)**. Alves CM[1], Mariano GRC[1], Silva SL[1], Ribeiro RB[1], Santos AM[1], Burmann APR[2], Medeiros AAN[1] [1]Unifap, [2]Lacen-Ap

09.094 **Antispasmodic activity of hydroalcoholic extract *Arrabidaea chica* (HBK) *verlot*.** Melo DNS[1], LEAL MM[1], Benevides ROA[1], Sousa AKA[1], Barroso WA[2], ABREU IC[3], Ribeiro RM[3], Amaral FMM[4], Silva SN[3], Cartágenes MSS[3] [1]UFMA – Pharmacology, [2]UFMA – Physiology, [3]UFMA – Pharmacology, [4]UFMA – Pharmacy

09.095 **Antimicrobial activity *in vitro* of ethanolic extract of *Agaricus brasiliensis* on pathogenic bacteria**. Frade ADS, Lucena KL, Farias RLGP, Nascimento JS UFPB – Fisiologia e Patologia

09.096 **Role of TRPM8 channels in the vasorelaxant effect induced by rotundifolone in the superior mesenteric artery from spontaneously hypertensive rats**. Almeida MM[1], Lira DP[2], Barbosa Filho JM[2], Gomes MA[3], Pesquero JL[4], Cruz JS[5], SILVA DF[6], Medeiros IA[1] [1]UFPB – Ciências Farmacêuticas, [2]UFPB – Química, [3]UFMG – Parasitologia, [4]UFMG – Fisiologia e Biofísica, [5]UFMG – Bioquímica e Imunologia, [6]UFBA – Biorregulação

09.097 ***Parahancornia amapa* (Huber) Ducke (Apocynaceae): A study of the gastroprotective activity**. Ribeiro RB[1], Silva SL[1], Alves CM[1], Burmann APR[2], Nascimento AA[1] [1]Unifap, [2]Lacen-Ap

09.098 **Assessment and quantification of presence of Resveratrol in grape juice obtained in a Brazilian industry**. Santos SM[1], Ott FP[1], Oliveira US[1], Weber BD[1], Carneiro AM[2] – [1]UNASP, [2]Superbom – Quality Management

09.099 **Gastroprotective action and antioxidant properties of fractions ethanol extract of *Neoglaziovia variegata* Mez**. Machado FDF[1], Oliveira IS[1], Viana AFSCV[1], Piauilino CA[1], Lima JT[2], Almeida JRGS[2], Oliveira FA[1], Oliveira RCM[1] [1]NPPM-UFPI, [2]UNIVASF – Ciências Farmacêuticas

09.100 **Endothelium-dependent vasorelaxant effect of butanolic fraction from *Caryocar brasiliense* Camb. leaves in rat thoracic aorta**. Oliveira LM[1], Rodrigues AG[1], Silva EF[1], Castro CH[1], Pedrino GR[1], Carvalho MHC[2], Costa EA[1], Filgueira FP[1], Ghedini PC[1] [1]UFG – Ciências Fisiológicas, [2]USP – Farmacologia

09.101 **Essential oil of *Lippia microphylla* Cham. (Verbenaceae) shows spasmolytic effect on guinea-pig trachea and ileum**. Oliveira GA, Travassos RA, Souza ILL, Martins IRR, Carreiro JN, Correia ACC, Pereira JC, Ferreira TF, Silva MCC, Tavares JF, Silva BA CCS-UFPB

09.102 **6-styryl-2-pyron of *Aniba panurensis* (Lauraceae) shows spasmolytic action on rat trachea and aorta rings**. Travassos RA[1], Silva MCC[1], Oliveira GA[1], Souza ILL[1], Silva ACL[1], Garcia FM[2], Barbosa Filho JM[1], Silva BA[1] [1]CCS-UFPB – Ciências Farmacêuticas, [2]FMN

09.103 **Participation of a NANC pathway on spasmolytic effect of the fraction of the total alkaloids from *Solanum paludosum* Moric. root bark on guinea-pig ileum**. Silva ACL, Monteiro FS, Oliveira GA, Travassos RA, Pereira JC, Ferreira TF, Souza ILL, Agra MF, Basílio IJLD, Silva BA UFPB – Ciências Farmacêuticas

09.104 ***Rinocerophis fonsecai* (*Bothrops fonsecai*) crude snake venom activity and its neutralization by commercial Bothropic antivenom**. Collaço RC[1], Cogo JC[2], Rocha T[3], Tamascia ML[1], Silva IRF[1], Hyslop S[1], Randazzo-Moura P[4], Rodrigues-Simioni L[1] [1]Unicamp – Farmacologia, [2]UNIVAP – Estudos da Natureza, [3]UNIVASF, [4]PUC-SP – Ciências Fisiológicas

09.105 **Fucose moieties are essential for the ability of fucosylated chondroitin sulfate to inhibit muscle damage induced by *Bothrops jararacussu* venom**. Monteiro-Machado M[1], Strauch MA[1], Tomaz MA[1], Cons BL[1], Ricardo HD[1], Lece FS[1], Fonseca RJC[2], Mourão PAS[2], Melo PA[1] [1]UFRJ – Farmacologia Básica e Clínica, [2]UFRJ – Química Biológica

09.106 **Study of topical subacute toxicity of essential oil delta-3-carene extracted from *Myracrodruon urundeuva* Fr. All**. Nogueira LM[1], Santos GGL[2], Ferraz IC[2], Ximenes RM[1], Mendonça R[3], Havt A[4], Martins RD[2] [1]UFC – Fisiologia e Farmacologia, [2]UFPE, [3]UFC – Química, [4]UFPE – Fisiologia e Farmacologia

09.107 **Evaluation of a fish oil concentrate in CFA sub-chronic inflammation model in rats**. Lobo BWP[1], Teixeira MS[1], Silva NLC[2], Silva LL[2], Lima CKF[2], Miranda ALP[2], Ramos MFS[1], Dellamora Ortiz G[1] [1]FF-UFRJ – Medicamentos, [2]FF-UFRJ – Fármacos

09.108 **Bioguided phytochemical study of *Justicia pectoralis* Jacq. var. *Stenophylla leonard* (Acathanceae): Evaluation of bronchodilator activity**. Casemiro J[1], Souza CAV[1], Moreira BAA[1], Soares JES[1], Vasconcelos A[2], Lima FJB[2], Brito TS[2], Ferreira LC[2], Roque CR[2], Magalhães PJC[2] [1]UFC – Farmácia, [2]UFC – Farmacologia do Músculo Liso

09.109 **Vasorelaxant effect of extract and fractions from *Solanum sisymbriifolium* in isolated rat mesenteric artery**. Simões LO[1], Albuquerque JM[1], Alves QL[1], Ramos M[1], Cechinel-Filho V[2]; Medeiros IA[3], Silva DF[4] [1]UFBA; [2]Univali; [3] UFPB, [4]ICS – Biorregulação

09.110 **Venom of *Micrurus lemniscatus* (coral snake) affects survival of neuro-2a cell line, primary cultured hippocampal neurons and dorsal root ganglia neurons**. Donato MF[1], Freitas ACN[2], Ferreira AF[2], Silveira N[1], Naves LA[1], Pimenta AMC[2], Chaves MM[2], Kuschmerick C[1], De Lima ME[2] [1]UFMG – Physiology and Biophysic, [2]UFMG – Biochemistry and Immunology

09.111 **A non-hemorrhagic, non-fibrinolytic cysteine-rich venom protein (CRVP) from *Bothrops jararaca* snake venom**. Silva IRF[1], Lorenzetti R[1], Rennó AL[1], Baldissera-Jr L[1], Zelanis A[2], Serrano SM[2], Hyslop S[1] – [1]Unicamp – Farmacologia, [2]CAT-CEPID-IBu – Toxinologia Aplicada

09.112 **Tetracycline inhibits hemorrhagic halo induced by *Bothrops erythromelas* venom in mice**. Santos JVA[1], Jorge RJB[1], Alves NTQ[1], Nogueira LM[1], Abreu ML[2], Ximenes RM[1], Havt A[1], Monteiro HSA[1] [1]UFC – Fisiologia e Farmacologia, [2]UFC – Medicina

09.113 **Preclinical evaluation of toxicity of the hydroethanolic extract of *Macrosophonia velame* (A. ST.-HIL.) M. Arg**. Ribeiro RV[1,2], Barbosa MA[3], Lima JCS[1], Martins DTO[1] [1]UFMT – Pharmacology, [2]UNIVAG – Health Sciences, [3]USP – Pharmacology

09.114 **Study of the healing effect of cobrina extract (*Tabernaemontana catharinensis*) in skin injuries induced in rats**. Alonso BS[1], Laureano JV[2], Souto PU[1], Freddo RJ[1] [1]Unipampa, [2]UFRGS

09.115 **Positive inotropic activity of a steroidal compound isolated from *Acnistus arborescens*, Withaphysalin F, in guinea pig atrial tissue**. Amorim LS, Gomes VM, Santos IF, Freire MSS, Fonteles MC, Santos CF, Nascimento NRF ISCB-UECE

09.116 **Anti-hyperglycemic properties of *Averrhoa carambola* L. leaves is related to insulinagogue effect in subchronically-treated hyperglycemic rats**. Flister KFT[1], Abreu AC[2], Pinto BAS[2], Silva SN[2], Paes AMA[2], Borges ACR[2] [1]UFMA – Ciências Biologicas, [2]UFMA – Ciências Fisiológicas

09.117 **Antihypertensive effect of α-terpineol on L-Name-induced experimental hypertension in rats**. Sabino CKB[1], Ferreira-Filho ES[1], Arcanjo DDR[1,2], Silva-Filho JC[1], Piauilino CA[1], Moura LHP[1], Amaral MPM[1], Oliveira RCM[1,2], Oliveira AP[1,3] [1]UFPI – Plantas Medicinais, [2]UFPI – Biofísica e Fisiologia, [3]UFPI

09.118 **Effects of solanidane steroidal alkaloids from *Solanum campaniforme* in hemorrhage and skin necrosis induced by *Bothrops pauloensis* venom**. Jorge RJB[1], Ximenes RM[1], Alves NTQ[1], Santos JVA[1], Toyama MH[2], Torres MCM[1], Pessoa ODL[1], Evangelista JSAM[3], Monteiro HSA[1] [1]UFC – Fisiologia e Farmacologia, [2]UNESP, [3]UECE

09.119 **Structure-activity relationship of the vasodilator activity of lignans in mouse aorta**. Maciel LIS[1], Lemos VS[2], Barbosa Filho JM[3], Cortes SF[1] [1]UFMG – Farmacologia, [2]UFMG – Fisiologia, [3]UFPB – Tecnologia Farmacêutica

09.120 **Beta-escin alleviates UV-induced oxidative skin damage in Swiss mice**. Segat HJ, Barcelos RCS, Benvegnú DM, Trevizol F, Dias VT, Roversi K, Dolci GS, Bürger ME UFSM – Fisiologia e Farmacologia

09.121 **Influence of hemoglobin content on antioxidant activity of superoxide dismutase and catalase in chicks intoxicated by aflatoxin B1**. Trombetta F.[1], Poersch A.[1], Braga A.C.M[1], Dilkin P.[2], Perlin V. J.[3], Marchioro A.[2], Boeira S.P.[1], Oliveira S.M.[2], Mallmann A.C.[2], Furian A.F.[1] [1]Labneuro-UFSM – Fisiologia e Farmacologia, [2]UFSM – Medicina Veterinária Preventiva, LAMIC, [3]SAMITEC

10. Cancer and Cell Proliferation

10.013 **Screening of metal complexes of ruthenium for cytotoxicity in cancer cell lines**. Soares TEL[1], Araújo AJ[1], Marinho Filho JDB[1], Sá DS[2], Fernandes FA[2], Pessoa C[1], Costa Lotufo VL[1], Lopes FGL[2], Sousa SHE[2], Moraes MO[1] [1]UFC – Fisiologia e Farmacologia, [2]UFC – Química Orgânica e Inorgânica

10.014 **Hellebrigenin-induced cell cycle arrest and apoptosis on HL-60 leukemia cells**. Soares BM[1], Cavalcanti BC[1], Rodrigues FAR[1], Cunha-Filho GA[2], Santos ML[2], Moraes MO[1], Pessoa C[1] [1]UFC – Fisiologia e Farmacologia, [2]UnB

10.015 **Cytotoxic potential of the venom of *Crotalus durissus cascavella* in tumor cell lines**. Araújo LS[1], Evangelista JSAM[1], Rosas NSC[1], Conceição ASMM[1], Rocha DD[2], Wilke DV[2], Ximenes RM[2], Guarnieri MC[3], Evangelista JJF[2], Costa Lotufo LV[2] [1]UECE – Ciências Veterinárias, [2]UFC – Fisiologia e Farmacologia, [3]UFPE – Zoologia

10.016 **Cytotoxicity and anti-angiogenic activity of a PLA2 from *Bothrops jararacussu* (Jararacuçu) snake venom**. Sousa NC[1], Barillas SG[1], Lorenzetti R[1], Ruiz AL[2], Böttcher-Luiz F[3], Carvalho JE[2], Serrano SMT[4], Zelanis A[4], Hyslop S[3] [1]Unicamp – Farmacologia, [2]CPQBA-Unicamp – Farmacologia, [3]CAISM-Unicamp, [4]CAT-CEPID-IBu – Toxinologia Aplicada

10.017 **Liver enzymatic regeneration is stimulated by association verapamil-amniotic membrane, in partially hepatectomized rats**. Bastos WP, Vilela-Goulart MG, Gomes MF CEBAPE-FOSJC-Unesp

10.018 **Evaluation of antitumor activity of molecules derived from the isothiocyanate**. Guerra FS[1], Boylan B[2], Radulovic N[3], Fernandes PD[4] [1]LAFION-UFRJ, [2]Panoz Institute-Trinity College – Pharmacy and Pharmaceutical Sciences, [3]University of Ni – Chemistry, [4]ICB-UFRJ

10.019 **Reversion of multidrug resistance by apiole-doxorubicin association in NCI/ADR-RES ovarian cancer cell line**. Longato GB[1,2], Monteiro PA[1,2], Ruiz ALTG[1], Foglio MA[3], Carvalho JE[1] [1]CPQBA-Unicamp – Farmacologia e Toxicologia, [2]IB-Unicamp, [3]CPQBA-Unicamp – Fitoquímica

10.020 **Antimelanoma activity of a tetrahydrofuran derivative of α-lapachone**. Santos EA[1], Ferreira SB[2], Pessoa C[1], Moraes MO[1], Kaiser CR[2], Ferreira VF[3], Costa-Lotufo LV[1], Montenegro RC[4] [1]UFC – Fisiologia e Farmacologia, [2]UFRJ – Química Orgânica, [3]UFF – Instituto de Química, [4]UFPA – Ciências Biológicas

10.021 **Antiproliferative effect of *Agaricus brasiliensis* mycelium *in vitro***. Navegantes KC[1], Albuquerque RFV[1], Santa-Hutz HD[2], Gomes RS[1], Monteiro MC[1] [1]FF-UFPA, [2]Unicentro – Engenharia de Produção

10.022 **Essential oil of lemongrass (*Cymbopogon citratus*) is cytotoxic to SK-MEL147 (human melanoma cells)**. Villaverde JM[1], Sanches LJ[2], Luiz RC[3] [1]UEL –Biology Applied to Health Sciences, [2]UEL –Experimental Pathology, [3]UEL – Sciences of Pathology

10.023 **Role of bacterial translocation in the pathogeneses steatohepatitis induced by irinotecan.** Costa MLV[1], Aragão KS[1], Lima-Júnior RCP[1], Almeida PRC[2], Carvalho CBM[3], Lopes CDH[4], Brito GAC[5], Matos PMTG[6], Bezerra FMT[6], Santos DAHO[6], Cunha FQ[7], Ribeiro RA[1] [1]UFC – Fisiologia e Farmacologia, [2]UFC – Patologia, [3]UFC – Microbiologia Médica, [4]HHJ-UFC, [5]UFC – Morfologia, [6]HHJ-ICC, [7]FMRP-USP

11. Clinical Pharmacology, Pharmacokinetics, Pharmacogenomics and Preclinical Toxicology

11.009 **Canrenoic potassium reduces contractile response in non vascular smooth muscle**. da Silva Neto JA[1], Wanderley AG[2], Miranda-Ferreira R[1], Caricatti-Neto A[1], Jurkiewicz A[1], Jurkiewicz NH[1] [1]Unifesp – Farmacologia, [2]UFPE – Farmacologia

11.010 **Design, synthesis and evaluation of novel inhibitors of focal adhesion kinase (FAK) for cardiac hypertrophy, fibrosis and cancer**. Antunes JE[1], Cardoso L[2], Pereira MBM[2], Dalla APC[2], Clemente CFMZ[3], Rocha RO[3], Franchi Jr GC[4], Rocco SA[3], Franchini KG[3] [1]Unicamp – Farmacologia, [2]Unicamp – Fisiopatologia Médica, [3]LNBIO-CNPEM, [4]Unicamp – CIPOI

11.011 **Evaluation on the effectiveness of gel of aroeira (*Myracrodruon urundeuva*) in the process of cicatrisation in mice**. Seabra FT, Câncio KS, Laurentino MR, Costa LL, Marques KF, Ferreira JR, Alves RS UFC – Clinical and Toxicological Analysis

11.012 **Comparison of antifungal activity of imidazoles and triazoles against strains of *Candida albicans***. Câncio KS, Castro IN, Menezes EA, Oliveira MCS, Cunha FA UFC – Clinical and Toxicological Analysis

11.013 **Assessment of the embryotoxic effect of LASSBio 596, a new antiasthmatic prototype designed by structural modification on thalidomide, on embryos of Zebrafish**. Berto-Júnior C[1], Guimarães JPD[1], Soares RA[1], Barbosa LMC[1], Costa ML[2], Barreiro EJ[1], Lima LM[1], Souza AM[1] [1]LASSBio-FF-UFRJ, [2]ICB-UFRJ

11.014 **CYP2C19 variability in a group of volunteers of Goiás State, Brazil**. Silveira KSA[1], Teixeira LSA[1], Filgueira FP[1], Mendonça HRS[2], Castelli EC[3], Ghedini PC[1] [1]UFG – Farmacologia e Fisiologia, [2]UFG – Neurologia e Psiquiatria, [3]UFG – Genética Humana

11.015 **Adenosine A2A receptor antagonists are broad facilitators of antinicotinic neuromuscular blockade monitored either with 2-Hz train-of-four or 50-Hz tetanic stimuli**. Pereira MW[1], Correia-de-Sá P[2], Alves-do-Prado W[1] [1]UEM – Pharmacology and Therapeutic, [2]IBSAS-University of Porto

11.016 **Effects of LASSBio-788, a potential antiatherogenic compound, on the male rat reproductive tract**. Alfradique VAP[1], Fernandes WO[1], Motta NAV[1], Kümmerle AE[2], Barreiro EJ[2], Brito FCF[1], Marostica E[1] [1]LAFE-UFF Physiology and Pharmacology, [2]LASSBio-UFRJ

11.017 **Evaluation of the acute toxicity of proteolitics extracts with industrial potential in Wistar rats**. Gomes LA[1], Silva TA[2], Liborio ST[3], Teixeira LO[3], Teixeira MFS[2], Moroni FT[4] [1]UFAM – Curso de Biotecnologia, [2]DPUA-UFAM, [3]Uninorte – Nutrição, [4]UFAM – Biotério Central

Courses

Rational Development of drugs. Rafaela Salgado Ferreira. Biochemistry and Immunology Department – UFMG

Developing new drugs is a challenge which involves high costs and high attraction rates. In an attempt to make this process more efficient, reducing time and costs involved, the tendency is to rationalize it and employ Structure Based Drug Design (SBDD) techniques. Currently, most of the drugs are developed through this strategy. In this course we will discuss basic concepts of SBDD, comparing it to other drug discovery strategies and exploiting different SBDD approaches. In addition, traditional examples of drugs which were rationally developed, such as captopril and HIV protease, will be shown. Finally, the potential of SBDD to overcome or avoid drug resistance will be discussed, based on case studies in antimicrobial, antiviral and anticancer therapies.

Schizophrenia: **molecular targets and experimental models**. Chairperson: François G. Noël (UFRJ) e Stela Maris Kuze Rates (UFRGS)

This course aims to give an integrated view of a complex psychiatric disorder, schizophrenia, which is very rich in terms of pharmacology in view of the multiplicity of receptors possibly involved in the molecular mechanism of action of atypical antipsychotics. Thus, far beyond schizophrenia itself, this course will have the opportunity to address concepts such as "multi-target" drugs, functional selectivity and strategies for the development and preclinical evaluation of new drug candidates. We will revise the dopaminergic hypothesis of schizophrenia and the main differences between classical and atypical antipsychotics, comparing their molecular targets, mechanisms of action and therapeutic efficacy. We will discuss the most used animal models for screening substances potentially active in the treatment of schizophrenia, as well as for the study of the neurobiology of this disease. These models will be classified according to the group of symptoms that they model. Finally, we will discuss some of the new potential targets that are being considered today as very promising, with emphasis on glutamate signaling (mainly modulation of glutamate N-methyl-D-aspartate (NMDA) and metabotropic (mGlu) receptors, glycine transporters inhibitors and AMPAkines).

Use of animals in research: **Use principles**, **model development**, **euthanasia and anesthesia**. Paulo de Assis Melo (UFRJ)

This course is for those involved in teaching and research and are interested in the use and handling of animals. We will discuss the ethical principles, historical aspects and the contribution of the use of animals in research for the development of science and in the quality of life for human beings and the animals themselves. The handling, the models developed, the use of genetic engineering and molecular biology in the creation of special animals able to reproduce pathologies and critical states are essential to understand the diseases and physiological processes. As well as the use of these animals for the development of new drugs and therapeutic techniques. The care in the administration and conduction of the different types of agents used for anesthesia, analgesia and procedures of euthanasia in animal handling. The training of human resources to give support for the growing demand which our country is going over needs awareness and a rational logic in the study and quality of the use of animals in teaching and research.

Conferences

Free radicals and defense against intracellular parasites. Leda Quercia Vieira, Eric Roma de Lima, Juan Pereira de Macedo, Louisa Maria de Andrade e Souza, Waldionê de Castro. Departamento de Bioquímica e Imunologia, ICB, UFMG, Belo Horizonte, MG, Brazil.

Parasites of the genus *Leishmania* are introduced into the skin of the vertebrate host by the bite of sand flies. When these parasites enter the host, a rapid neutrophil wave is triggered. These cells are capable of ingesting *Leishmania* but do not support their growth. The migration of neutrophils to the skin seems to involve several cytokines and chemokines, and the presence of these cells in the first week of infection renders BALB/c mice more susceptible to *L. amazonensis.* However, neutrophils are not capable of supporting *Leishmania* growth and a second wave of migrating cells, the macrophages, will provide the habitat necessary for the parasite survival. *L. major* or *L.amazonensis* trigger a respiratory burst in macrophages. Interestingly, macrophages from mice that lack nitric oxide synthase 2 (NOS2 ko) produce larger amounts of reactive oxygen species (ROS) when exposed to *L. major* or *L. amazonensis.* However, these macrophages are more permissive to both parasites, which may speak for the lack of importance of these species in resistance to infection. However, macrophages from mice lacking the phagocyte NADPH dependent oxidase (phos ko) are more permissive to *L. infantum* and do not kill these parasites as wild-type macrophages. Activation of phox ko macrophages with IFN-γ and LPS triggers production of high amounts of nitric oxide, which is quite inefficient to kill parasites when compared to wild-type macrophages. Infection of phox ko mice with *Leishmania* in the dermis promotes intense migration of neutrophils to the site of infection and a larger inflammatory infiltrate. Parasitism, however, is not different from wild-type mice. Our data speaks for a differential role of ROS towards parasites of the genus *Leishmania.* In addition, ROS seem to be important in the regulation of the inflammatory infiltrate at the site of infection.

Supported by INCT Redoxoma, CNPq, CAPES and FAPEMIG.

Capturing affective dimensions of pain preclinically to speed translation. Frank Porreca, Department of Pharmacology, University of Arizona, Tucson, AZ USA

Much progress has been made in understanding of the neurobiology of pain in recent decades. However, despite significant effort and investment on the part of academia and the pharmaceutical industry, very few new mechanistic therapies for pain have been introduced to clinical practice. As a consequence, treatment of pain continues to depend on therapeutic modalities that have been in place for the last 40 years. Many reasons exist for the apparent failure to advance new potential mechanisms from the preclinical laboratory to patients. Among these reasons is the concern that preclinical models of pain are not predictive of mechanisms that will demonstrate efficacy in human pain states.

An important criticism directed against preclinical pain models is that outcomes depend upon measurement of reflexive evoked responses following application of either normally innocuous or noxious external stimuli. These behavioral responses represent evoked sensory thresholds, usually in an injury condition that might reflect the presence of pain. However, the primary complaint from pain patients is that of ongoing pain, i.e., pain that is independent of an external stimulus. Outcomes of potential therapy in patients are assessed using scales that measure pain intensity rather than sensory thresholds. Measuring ongoing pain in animals has been challenging and our relative lack of ability to do so, until recently, has been considered to be a significant barrier for translation of new mechanisms for pain.

We have recently attempted to address one part of this problem by experiments designed to unmask spontaneous, or ongoing, pain using the principle of negative reinforcement. Our studies have shown that animals will seek relief from an aversive state that is elicited by ongoing pain. We have captured such motivated behavior using conditioned place preference. Relief of pain is rewarding in humans. We have extended this idea using a paradigm which allows us to demonstrate that pain relief engages the reward circuit. Understanding how pain relief engages this circuit may be the key to the development of new therapies.

The manuscript section process at *Science*. Peter Stern. Senior Editor Science. Europe Office, Bateman House
For many scientists the review process at SCIENCE is a bit like a black box. Someone submits a manuscript and about two weeks later receives either a rejection letter or a pre-edited version with referee comments attached. It is often difficult for people unfamiliar with the system to imagine how much has happened behind the scenes during this period of time and how much energy we have devoted to assure that the decision was as fair and unbiased as possible. With this talk I want to make the review process more transparent and want to give people guidelines of what might be considered an appropriate SCIENCE manuscript, i.e. a submission with a good chance of acceptance.

Increasing protein O-GlcNAcylation: **A new paradigm for ischemic cardioprotection**. John C. Chatham and Richard B. Marchase, University of Alabama at Birmingham, Birmingham, Alabama, USA
The post translational modification of a single ß-N-acetyl-glucosamine moiety via an O-linkage to serine and threonine residues of cytoplasmic and nuclear proteins, known as O-GlcNAc, has become increasingly recognized as an important regulator of numerous biological processes critical for normal cell function. O-GlcNAcylation exhibits parallels with protein phosphorylation, in that it responds to acute stimuli, alters protein function and enzyme activity and modifies the same or similar Ser/Thr residues. However, in contrast to phosphorylation, O-GlcNAc levels are regulated largely by the metabolism of glucose via the hexosamine biosynthesis pathway; consequently, increased levels of O-GlcNAc have been frequently been implicated as a pathogenic contributor to glucose toxicity associated with diabetes and other chronic diseases with aberrant metabolism including cancer. However, there is increasing evidence that acute activation of O-GlcNAc levels is an endogenous cellular stress response associated with increased cell survival. We have demonstrated that in the perfused heart acute activation of O-GlcNAc levels, either by increasing O-GlcNAc synthesis or inhibiting its degradation affords remarkable protection against ischemia/reperfusion (I/R) injury. Of particular interest, treatment at the time of reperfusion with inhibitors of O-GlcNAcase, which catalyzes the removal of O-GlcNAc, significantly improves functional recovery and attenuates tissues injury in an O-GlcNAc dependent manner. We have shown that in isolated cardiomyocytes, over expression of O-GlcNAc transferase (OGT), which catalyzes O-GlcNAc synthesis, is protective against hypoxia/reoxygenation injury; conversely, decreasing OGT levels increased cardiomyocyte injury. We are currently working to identify the mechanisms underlying O-GlcNAc mediated cardioprotectionby which increasing O-GlcNAc levels protects against I/R injury; preliminary studies indicate that decreased calcium overload and attenuation of mitochondrial dysfunction both likely contribute to O-GlcNAc mediated cardioprotection. (Supported by NIH Grants: and HL079364, HL101192 and HL110366).

Development of crotalphine for the treatment of pain: **challenges and approaches**. Yara Cury, Laboratório Especial de Dor e Sinalização, Instituto Butantan,
Due to their high selectivity and specificity for molecular targets, animal venoms/toxins have been used as potential therapeutics in the treatment of pain, being candidates for the development of analgesic drugs. Studies on the use of these substances as analgesics are based both on their pharmacological activities/mode of action and on folk medicine/empirical observations. Data from the 1930's have shown that the venom of the South American rattlesnake *Crotalus durissus terrificus* induces analgesia in human beings. Based on these empirical data and also on experimental studies confirming the analgesic activity of the crude crotalid venom, we have identified and isolated, from this venom, a peptide, named crotalphine, which displays potent antinociceptive activity when administered in low doses by oral, i.v. or intraplantar routes. This effect is mediated by activation of cannabinoid receptors and release of endogenous opioid peptides, which, in turn, activate peripheral opioid receptors. Despite presenting opioid activity, prolonged treatment with crotalphine did not cause the development of tolerance to the antinociceptive effect. The analgesic properties of this peptide – active in low doses by oral route, long-lasting effect and no development of tolerance – prompted the development of studies (nonclinical trials) to determine the possibility of using this peptide as a novel analgesic drug. For this purpose, crotalphine's applied Patent was licensed to a Brazilian pharmaceutical company. Nonclinical trials have shown difficulties when developing innovation in Brazil and evidenced the need/lack of: robust proof of concept assays; technology transfer office and policies from Butantan Institute; nonclinical trials regulations in Brazil; good laboratory practice–certified preclinical facilities; contract manufacturing organizations for protein synthesis, to improve the crosstalk between Universities/Research Institutes and Pharmaceutical Companies; venom-based drug discovery programs by Brazilian pharmaceutical companies, training programs for human resources. Financial support: FAPESP, CNPq, CAT/CEPID, INCTTOX, FINEP

Symposia

Intracellular smooth muscle proteolysis in sepsis-induced vascular hypocontractility. Richard Schulz,. Departments of Pediatrics & Pharmacology, Mazankowski Alberta Heart Institute, University of Alberta, Edmonton, Canada.
Vascular hyporeactivity to vasoconstrictors (hypocontractility) is a key feature of the arterial vasculature in the hypotensive response of septic shock. The result of this is a rapidly developing and extremely low blood pressure which is refractive to pressor drugs. Hypocontractility is initiated by enhanced oxidative stress in the vascular wall, in particular through the local biosynthesis of peroxynitrite. One of the early responses to peroxynitrite stress is the activation of matrix metalloproteinases (MMPs), in particular MMP-2, which is both ubiquitous and abundant and is found within vascular smooth muscle and endothelial cells. My lab discovered that MMP-2, by virtue of its signal sequence which inefficiently labels it for secretion from cells, is localized within vascular smooth muscle cells and targets specific proteins for proteolytic cleavage which may mediate its vascular effects. Using both control and endotoxemic rats, MMP inhibitors protected against endotoxin- or interleukin-1beta-induced vascular hypocontractility. We found that MMP-2 colocalizes with the actin binding protein calponin-1 in vascular smooth muscle cells. Calponin-1 modulates smooth muscle contraction via its scaffolding and signaling functions. Calponin-1 is cleaved at its C-terminal region by MMP-2 in vitro. During endotoxemia calponin-1 immunostaining and its levels in the aorta decreased and this was prevented by MMP inhibitors, which also improved vascular hypocontractility. Future work will likely uncover other novel protein targets of MMP-2 inside cells of the vascular wall which may mediate vascular tone. Moreover, the protolytic products may also contribute to the inflammatory response. This research reveals that MMP-2 is an important modulator of vascular hypocontractility by proteolysis of intracellular proteins and that specifically targeting intracellular MMP-2 may result in better drugs for the treatment of septic shock.

Triggering cell activation in sepsis vascular dysfunction. Jamil Assreuy – Department of Pharmacology, Federal University of Santa Catarina.
Sepsis is a serious inflammatory disease that occurs in front of a systemic pathogen infection. Although many researchers have been carried on about this public health problem the last decades, sepsis incidence is still increasing and no effective treatment has been developed yet. One major problem in sepsis is the occurrence of a persistent and refractory

hypotension, due in part, to the presence of a large amount of nitric oxide (NO) on vascular bed. NO can be synthesized by three NO synthases that can be constitutively expressed (c-NOS: NOS-1and NOS-3) or have its expression induced (NOS-2) by pro-inflammatory agents in almost all cells of the body. Previous results of our laboratory have shown that hypotension and mortality during sepsis are prevented by the early administration of NOS-1 inhibitors, suggesting that c-NOS play an important role in sepsis. Thus, we aimed to understand the role of NO and other reactive species insmooth muscle cell activation *in vitro* in front of lipopolysaccharide (LPS)and interferon-ɣ (IFN) stimulation, two classic pro-inflammatory agents.A7r5, a cell line of rat aorta smooth muscle cells presented a quick increase in intracellular NO and peroxynitrite/hydrogen peroxide content when stimulated with LPS/IFN. This rapid increase in reactive species is reduced in the presence of a nitric oxide synthase inhibitor and a NO scavenger, confirming that peroxynitrite is generated in a time-dependent manner by the reaction of NO with superoxide anion. A7r5 control cells (not stimulated) express c-NOS, but not NOS-2. NOS-2 expression was induced by LPS/IFN and significantly impaired when NO and peroxynitrite pulse were inhibited. This pulse occurs from the activation of c-NOS, since NOS-2 is not constitutively expressed in smooth muscle cells. Thus, we show for the first time that interfering with the early phase of cell activation leads to an impairment of NOS-2 expression in late periods of cell activation. Also, we find out that this impairment in NOS-2 expression in the absence of NO and peroxynitrite pulse is due to a reduced NF-κB nuclear translocation. Therefore, these results together demonstrate the importance of low levels of NO and peroxynitrite as signaling agents in vascular smooth muscle cell NOS-2 expression and gives a new mechanism hypothesis to treat vascular dysfunction in sepsis.

Collaboration between mitochondrial products and chemokines to injury amplification during sterile inflammation. Gustavo Batista Menezes, Laboratório de Imunobiofotônica, Departamento de Morfologia, Universidade Federal de Minas Gerais, Brazil

Acetaminophen (APAP) is a safe analgesic and antipyretic drug. However, APAP overdose leads to massive hepatocyte death. Cell death during APAP toxicity occurs by oncotic necrosis, in which the release of intracellular contents can elicit a reactive inflammatory response. We have previously demonstrated that an intravascular gradient of chemokines and mitochondria-derived formyl-peptides collaborate to guide neutrophils to sites of liver necrosis via CXC chemokine receptor 2 (CXCR2) and formyl-peptide receptor 1 (FPR1), respectively. Here, we investigated the role of CXCR2-chemokines and mitochondrial products during APAP-induced liver injury and in liver neutrophil influx and hepatotoxicity. During APAP overdose, neutrophils accumulated into the liver and blockage of neutrophil infiltration by anti-GR1 depletion or combined CXCR2-FPR1 antagonism significantly prevented hepatotoxicity. In agreement with our in vivo data, isolated human neutrophils were cytotoxic to HepG2 cells when co-cultured, and the mechanism of neutrophil killing was dependent on direct contact with HepG2 cells and the CXCR2-FPR1 signaling pathway. Also in mice and humans, serum levels of both mitochondrial DNA (mitDNA) and CXCR2-chemokines were higher during acute liver injury, suggesting that necrosis products may reach remote organs via circulation, leading to a systemic inflammatory response. Accordingly, APAP-treated mice presented a marked systemic inflammation and lung injury, which was prevented by CXCR2-FPR1 blockage and TLR9 absence (TLR9(-/-) mice). Conclusion: Chemokines and mitochondrial products (formyl-peptides and mitDNA) collaborate in neutrophil-mediated injury and systemic inflammation during acute liver failure. Hepatocyte death is amplified by liver neutrophil infiltration, and the release of necrotic products into circulation may trigger a systemic inflammatory response and remote lung injury. Financial Support: CNPq, CAPES, FAPEMIG, PROXEX – Biofotônica

Mechanisms of oxidative stress-induced endothelial cell reprogramming. Richard D. Minshall, PhD, Depts. of Anesthesiology and Pharmacology, University of Illinois, Chicago

Numerous cardiopulmonary, autoimmune, and inflammatory diseases, as well as cigarette smoke and dietary suppressants induce significant oxidative stress resulting in endothelial cell (EC) dysfunction, hyperproliferation, and vaso-occlusive vascular disease. Proteins thought to play critical roles in the maintenance of normal endothelial cell function include the membrane-associated scaffolding protein caveolin-1 (Cav-1) and endothelial nitric oxide synthase (eNOS). As shown by our group and several others, decreased expression of Cav-1 results in eNOS hyperactivation and EC dysfunction. Thus, critical to determining potential therapeutic strategies for restoring eNOS function is identification of mechanisms which induce loss of Cav-1 expression and eNOS hyperactivation in ECs. We tested the hypothesis that oxidative stress first inhibits the phosphatase PTEN, which is known to negatively regulate eNOS activity, and then determined whether persistent NO production induces Cav-1 S-nitrosylation, ubiquitination, and degradation via the proteosomal pathway. In essence, our studies support the hypothesis that oxidative stress abolishes these two critical negative regulatory mechanisms that control homeostatic eNOS function, i.e., PTEN and Cav-1, resulting in the conversion of eNOS from a transient nitric oxide-producing enzyme to a peroxynitrite-generating system. Histological, physiological, and pharmacological evidence further revealed that *cav-1*$^{-/-}$ mouse lung microvessels were not only the source of increased vascular resistance, but that these vessels were significantly disorganized, immature, and poorly perfused. Furthermore, cultured *cav-1*$^{-/-}$ ECs were shown to be hyperproliferative and dysfunctional in their ability to generate lumenized vessels in Matrigel. Our data further indicate that this angiogenic defect may be due to hyperactive eNOS-mediated disruption of endothelial cell-cell adhesive junctions and cell-cell signaling. eNOS-dependent peroxynitrite production and resultant Akt and Src hyperactivation in *cav-1*$^{-/-}$ ECs decreased junctional VE-cadherin staining, increased nuclear β-catenin signaling, and largely abolished nuclear Notch signaling dependent on EC-EC contact. Importantly, the noted EC differentiation and angiogenesis defects were rescued in *cav-1*$^{-/-}$ *x eNOS*$^{-/-}$ double knockout ECs. Therefore, PTEN inhibition, Cav-1 degradation, and eNOS hyperactivation-mediated endothelial cell reprogramming may be critical factors leading to persistent oxidative stress-induced vaso-occlusive disease.

Role of lipid rafts in purinergic signaling: **micro regionalization of human purinoceptors**, **cellular and pharmacological implications**. J. Pablo Huidobro-Toro, Laboratorio de Nucleótidos, Centro CARE, y Núcleo NuBEs, del Departamento de Fisiología, Facultad de Ciencias Biológicas, P. Universidad Católica de Chile.

ATP and related nucleotides are extracellular messengers released to the cell environment by a variety of mechanisms and from almost every body tissue and cell type. While nucleosides interact with 4 clones of plasma membrane purinoceptors, nucleotides recognize essentially the P2 family of purinoceptors, comprised of 7 clones of P2X receptors (P2XRs) and 8 clones of P2YRs, the later coupled to G proteins. The P2XRs are quite selective for ATP or related triphosphate adenosine analogs, the P2Y receptors are more promiscuous and are activated by ATP, ADP, UTP or UDP or even nucleotide sugars. A current problem related to the physiology and pharmacology of nucleotide receptors relates to their micro regionalization in the plasma membrane and the need of their association to membrane areas rich in cholesterol and glycosphingolipids, known as lipid rafts, enriched in trimeric G proteins. Membrane rafts were

prepared following differential sucrose gradient centrifugations; the fractions were analyzed by immunoblots specific for each receptor subtype. We will discuss the role of lipid rafts in P2Y1R and P2Y2R signaling and P2X1R pharmacology. Most of our experiments used smooth muscle cells derived from denuded chorionic vessels from term human placentae supplied by University Hospital maternity wards collaborators. While P2Y1R activation elicited its partition out of membrane rafts within 2-4 min following tissue exposure to 1-100 μM ATP, ADP or 2-MeSADP, the P2Y2R is basically re-distributed out of membrane rafts following P2Y2R activation with 0.1-100 μM ATP or UTP, establishing differences in the signaling mechanisms related to P2Y1 or P2Y2Rs signaling. The shifts are concentration-dependent and were blocked by selective P2YR antagonists. Human vas deferens samples from patients undergoing elective vasectomies provided the material to study the P2X1R micro regionalization. This receptor showed a lipid raft distribution that was not altered following receptor desensitization, implying that even after prolonged and persistent receptor activation it was not displaced out of lipid rafts or rapidly internalized. In view of these findings, the role of cholesterol and phosphoinositides was further investigated for the P2X1R. The general implications of the present findings pave the way to eventual pharmacological interventions of these receptors as tissue targets to multiple human diseases.

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Caveolar Na/K-ATPase: **from ion pumping to signaling transduction**. Luis Eduardo M. Quintas. Instituto de Ciências Biomédicas, Universidade Federal do Rio de Janeiro, Brazil.

Na^+/K^+-ATPase is a well-known integral plasma membrane protein that plays a critical role in cell homeostasis due to the active transport of Na^+ and K^+ against their electrochemical gradients. This pumping function is responsible for maintenance of the resting membrane potential, osmotic control as well as Na^+-coupled processes. Recently, however, novel functions have been unveiled revealing a new paradigm for the Na^+ pump. The Na^+/K^+-ATPase is able to assemble with SRC tyrosine kinase and signaling kinase cascades are activated through protein-protein interactions when cardiotonic steroids (CTS) bind to the functional receptor complex. Serial reports have shown that the this pool of Na^+/K^+-ATPase is compartmentalized in caveolae, plasma membrane invaginations enriched in lipids such as cholesterol and the scaffolding protein marker caveolin, composing the Na^+/K^+-ATPase signalosome. The α subunit of Na^+/K^+-ATPase has a caveolin-binding motif at its cytosolic N-terminal domain and the interaction with the caveolin-1 (Cav-1) N terminus was suggested by confocal microscopy, immunoprecipitation and GST pull-down assays. The CTS ouabain stimulates p-Tyr of Cav-1 and the depletion of either cholesterol or Cav-1 reduces the activation of protein kinase signaling by ouabain. Using Cav-1 knockout mice, we showed that ouabain-induced signaling and the cellular effects are impaired. Interestingly, both the knockdown and knockout of Cav-1 increases Na^+/K^+-ATPase pumping activity, suggesting the existence of two interconverting pools of the enzyme in living cells. Na^+/K^+-ATPase is also critical for plasmalemmal stabilization of Cav-1. We demonstrated that graded Na^+/K^+-ATPase depletion reduces cell membrane Cav-1 (and caveolae) abundance by accelerating its endocytosis, which is dependent on Na^+/K^+-ATPase-Cav-1 interaction. Moreover, Na^+/K^+-ATPase-Cav-1 interaction affects cell cholesterol distribution. Considering that CTS are now recognized as new class of mammalian steroidhormones, these previously unidentified caveolar Na^+/K^+-ATPase mechanisms bring an unique perspective for current assumptions of Na^+/K^+-ATPase regulatory effects in health and disease. Financial support: CAPES, Faperj, CNPq.

Challenges and perspectives in the development of new anticancer agents in Brazil. Letícia Veras Costa Lotufo. Departamento de Fisiologia e Farmacologia, Faculdade de Medicina e Instituto de Ciências do Mar, Universidade Federal do Ceará, Fortaleza, Ceará, Brasil.

Anticancer agents are closely related to natural products, since over 60% of currently used drugs in cancer therapy are natural products related compounds. In such way, natural resources comprise the most promising possibilities of finding new and efficient molecules with impact in the therapy of resistant diseases. Brazil is well recognized for its mega diversity, related to the occurrence of an immensurable number of species in different biomes, and, consequently, the country beholds a huge potential for natural products discovery. The National Laboratory of Experimental Oncology develops a research program aiming at the evaluation of new natural or synthetic anticancer molecules involving *in vitro* and *in vivo* models. In the period between 2000 and 2010, over to 10,000 samples were screened, and several promising molecules were selected for further studies. Piplartine (piperlongumine) is an alkaloid isolated from *Piper* species with potent anticancer activity. This compound is selectively cytotoxic against cancer cells with a mechanism of action dependent on reactive oxygen species generation, causing a cell-cycle arrest at G2M and DNA damage. It presents an excellent oral bioavailability in mice, inhibiting tumor growth with only weak systemic toxicity. Although we published data on piplartine anticancer properties since 2003, in 2009 a group from Massachusetts General Hospital deposited a patent on “piperlongumine and piperlongumine analogs for use in the treatment of cancer”. It is worthwhile to mention that restrictive Brazilian laws on the access of Brazilian biodiversity and use of genetic resources made impracticable the protection of our data. This is a good example of the perspectives and challenges for the development of news anticancer agents in Brazil. Financial support: CNPQ, CAPES, FUNCAP.

Pathogenesis of gastrointestinal toxicities of irinotecan-based cancerchemotherapy: **an opportunity to the development of cytoprotective agents.** Roberto César Pereira Lima Júnior, PhD Departamento de Fisiologia e Farmacologia, Faculdade de Medicina, Universidade Federal do Ceará, Fortaleza, Ceará, Brasil.

Colorectal cancer (CRC) is the third most prevalent neoplastic disease in the world and is one leading cause of death. Irinotecanisa drug used as first line treatment for CRC and liver metastases of CRC and has markedly improvedthe overall survival of patients. However, irinotecan-related side-effects, which include intestinal mucositis and steatohepatitis, significantly increase the risk of dose reduction, treatment interruptionand the length and cost of hospitalization. Mucositis is extremely common, occurring in approximately 40-75% of patients following standard doses of chemotherapy.The literature suggests, with our contribution, that intestinal mucositis is characterized by cell loss in the epithelial barrier lining the gastrointestinal tractwhich leads to cytokine release (TNF-alpha, IL-1beta, IL-18), activation of pro-inflammatory enzymes, including inducible nitric oxide synthase (iNOS),and increased risk of sepsis. In addition, data from our laboratory suggest that the intestinal barrier disruption along with bacterial translocation seem to be decisive factors for the emergence of a new toxicity of irinotecan, the steatohepatitis. In that pioneer animal model of steatohepatitis developed by our research group, we have also shown the increased immunoexpression of toll-like receptor 4 (TLR4) in liver and intestinal samples of irinotecan-injected mice. Additionally, clinical histopathological findings for Nonalcoholic Steatohepatitis (NASH) are observed in such animal model, including steatosis, variable degrees of liver inflammation, fibrosis and necrosis. We have suggested some mechanisms implicated in NASH development, for instance, TLR4, IL-1 beta and iNOS activation. However, the precise

role of these signaling pathways and/or inflammatory mediators for the development of irinotecan-associated toxicities is still to be established and is currently under investigation in our laboratory.This knowledge opens perspectives for the search of cytoprotective agents.Financial support: CNPQ, CAPES, FUNCAP.

Innovation: **Advances in the university-pharmaceutical industry interaction**. **What we have learned**. **Which is the vision** of the future? **Chairperson**: Roberto Nicolsky (PROTEC / IPD-Farma)

The present and the future of national pharmaceutical industry: Roberto Nicolsky, coordinator of the symposium will give an introduction about the performance of the pharmaceutical industry technological innovation in the concept of the national health industry complex in the country and which are the real perspectives for the future. Will show which tools we need for a Knowledge Management Technology that can give independence on the world stage in 20 years and the critical analysis of public policies and the participation of the industry. *The Vision of Industry* Dante Alario Junior will show the relationship between the pharmaceutical industry which he is the Director and Research institutions, the obstacles and the solutions found in this relationship and his vision of the future. *The vision of the University* José Fernando Perez will talk about a success story where there was an intense interaction company-university- financial agency and national and international research institution. *The Financial Agencies vision* Hernan Chaimovich will reveal the challenges as well as the problems and solutions related to interesting experiences developed through Public Calls involving development agency and national and international pharmaceutical industries,.

Gas6/TAM signaling differentially modulates chronic fungal asthma with the expansion of myeloid regulatory cell subsets. Takehiko Shibata, Ugur Burcin Ismailoglu, Ana Lucia Coelho, Nicholas W. Lukacs, Steven L. Kunkel, Ana Paula Moreira, Cory M. Hogaboam. Department of Pathology, University of Michigan Medical School, Ann Arbor, MI, USA

Growth-associated factor 6 (Gas6), a Tyro3, Axl, Mertk (TAM) receptor ligand, is detected in a variety of diseases and has various roles. Herein, we show that Gas6 differentially modulates experimental fungal asthmatic response via the expansion and modulation of myeloid-derived regulatory cells (MDRCs). *Aspergillus fumigatus*-sensitized mice were challenged with live Aspergillus conidia and received approximately 2 μg (low) or 7 μg (high) of recombinant Gas6 via intranasal installation from days 14 to 28 after conidia challenge. In the low dose Gas6 group, significant airway hyperresponsiveness (AHR), airway remodeling, and whole lung IL-13 were observed compared with the control group. Although high dose Gas6 treatment significantly suppressed AHR and the whole lung levels of inflammatory cytokines compared with control, this treatment exacerbated airway remodeling. MDRCs have both disease enhancing and suppressing cells in asthma. Indeed, low dose Gas6 treatment increased the accumulation of $CD11b^{+}F4/80^{+}Ly6C^{-}Ly6G^{+}$ MDRC with pro-inflammatory properties into asthmatic lung whereas high dose Gas6 promoted the accumulation of immunosuppressive $CD11b^{+}F4/80^{+}Ly6C^{+}Ly6G^{-}$ MDRC during chronic asthma. Anti-Axl Ab, but not anti-Mer Ab, treatment significantly suppressed not only AHR but also airway remodeling in asthmatic mice compared with IgG control asthmatic groups. Together, these results demonstrate that Gas6-TAM receptor interactions modulate fungal asthma, in part through effects on MDRCs.

TNF-alpha as a therapeutic target in experimental silicosis in mice. Silva, PMR.; Ciambarella, BT; Ferreira, TPT; Arantes, AC; Cordeiro, RS.; Szymkowski, DE[1] & Martins, MA. Laboratory of Inflammation, Oswaldo Cruz Institute/FIOCRUZ, Rio de Janeiro, Brazil; [1]Xencor, Monrovia, USA.

Silicosis is part of a group of pulmonary pathologies consequence of a long-term exposure to inhaled dust of silica, characterized by a slow progressive fibrosis and impairment of lung function. In spite of the therapeutic arsenal currently available, there is no specific treatment for the disease. TNF-alpha is a pivotal pro-inflammatory cytokine, naturally produced as a transmembrane protein processed by TACE to generate soluble TNF, which has been implicated in several lung pathologies. In this study we investigated whether TNF-alpha can be considered as a therapeutic target for silicosis. Silica particles were instilled by intranasal route into different mice strains (Swiss-Webster, TNF-alpha$^{-/-}$ and C57 Bl6) and the analyses were performed at 7 or 28 days post-stimulation. Silicotic mice exhibited a time-dependent leukocyte infiltration in the lung parenchyma, collagen deposition and granuloma formation during the course of the disease. The mRNA expression of TNF-alpha was higher in the silicotic lungs than in those from controls, at 7 and 28 days, but a significant increase in the levels of the protein was detected only on day 28. Silica exposure also caused an increase in the basal levels of lung resistance and elastance as well as airways hyperreactivity to methacholine aerosolization. TNF-alpha$^{-/-}$ mice showed a less intense inflammatory response, including granuloma formation, and displayed significantly reduced airways hyperreactivity to methacholine, at both time-points, indicating that TNF-alpha seems to be an important target in silicosis. In another set of experiments, we showed that therapeutic administration of XPro 1595, a selective inhibitor of the soluble form of TNF-alpha, and of infliximab, an antibody which neutralizes the transmembrane and soluble form of TNF-alpha, inhibited collagen deposition and granuloma formation as well as chemokine and cytokine generation in the lungs of silicotic mice. Lung function alterations were also sensitive to XPro 1595 and infliximab. Additionally, thalidomide, an inhibitor of TNF-alpha protein synthesis, suppressed silica-induced airways hyperreactivity as well as fibrosis and granuloma formation. Cytokine and chemokine production was also inhibited by thalidomide. In conclusion, we demonstrate that TNF-alpha, primarily driven by its soluble form, seems to importantly contribute to several features of experimental silicosis in mice, including lung function alteration, inflammation and fibrosis. They also suggest that neutralization of TNF-alpha synthesis and activity may have potential for the treatment of chronic inflammatory diseases such as silicosis. Financial support: FIOCRUZ/CNPq/FAPERJ/TIMER (EU-Brazil Cooperation).

Chemokine system: **key regulators of pulmonary inflammation and fibrosis induced by bleomycin in mice**. Remo Castro Russo, Depto. de Fisiologia e Biofísica, ICB, UFMG, Brazil.

Pulmonary Fibrosis (PF), a chronic and lethal lung disease, may be triggered by inflammatory conditions that precede the tissue remodeling. Bleomycin (BLEO)-induced lung fibrosis in mice is the most commonly used model to study PF pathogenesis. BLEO induces alveolar epithelium damage and chemokine release, which drives recruitment and activation of leukocytes in the airways, fibroblast proliferation and excessive collagen deposition. Among approximately 50 chemokines, MIP-1α/CCL3 and IL-8/CXCL8 have been identified as orchestrators of chronic lung inflammation and fibrosis, both shown in experimental models and in patients diagnosed at the clinic. Studies conducted by our group have shown new strategies of interfering with chemokine system in order to reduce lung inflammation and fibrosis induced experimentally by BLEO. We have identified on ticks salivary glands a *chemokine binding protein*, Evasin-1, that binds to MIP-1α. Evasin-1 protects mice from lethality; preventive or therapeutic Evasin-1 administration decreased pulmonary fibrosis associate with reduced inflammation, resembling MIP-1α KO mice. The blockade of CXCR2 using the *chemokine receptor antagonist* DF2162, an IL-8 receptor, prevents fibrosis induced by BLEO in preventive or therapeutic

schedules. This was associated with inhibition neutrophil influx and angiogenesis. Moreover, we evaluated the effects of CXCR2 non-competitive (DF2156A) *vs* competitive (SCH527123) allosteric inhibitors in BLEO model. We found reduced lung inflammation and fibrosis, but diverse systemic leukocytes and chemokine levels, depending of receptor blockage strategy. PA401 is a *glycan-binding decoy protein* based on IL-8 mutation, acting as antagonist of chemokine-bind site at glycosaminoglycans and reducing chemokine presentation. PA401 treatment reduces the neutrophilic influx in dose-dependent manner, protecting mice from lung inflammation induced by BLEO. Chemokine receptors may signal via PI3Ks. PI3Kγ deficiency led to attenuation of lung angiogenesis, leukocyte influx and lung fibrosis, and decreased lethality induced by BLEO. Pharmacological inhibition of PI3Kγ caused functional changes in endothelial cells and fibroblasts *in vitro* induced by chemokine, suggesting that PI3Kγ plays a role in multiple levels in the context of PF. Together, these results indicate that chemokines are key regulators of pulmonary inflammation and fibrosis, which can be attenuated through pharmacologic intervention. We concluded that chemokine system may be an interesting target in the control of PF in humans. Financial support: CNPq

Biased agonism in alpha-1 adrenergic receptor subtypes. André S. Pupo. Department of Pharmacology, IBB/UNESP – Botucatu, SP, Brazil.

α1 adrenergic receptors (ARs) are 7 TM domain receptors classically known to activate the Gq/11 intracellular signaling pathway. Norepinephrine and epinephrine regulate important physiological process through activation of α1 ARs, including behavioral responses, neuronal excitability, cell growth and differentiation and contraction of vascular and non-vascular smooth muscles. A large array of drugs activating α1 ARs (agonists) is part of the therapeutic arsenal available to revert hypotension in shock and as over-the-counter vasoconstrictors for local application to the nasal mucous membrane or the eye. The repeated exposure to an agonist may lead to diminished responses, a process known as tachyphylaxis. One of the causes of tachyphylaxis is receptor desensitization, which is usually accompanied by receptor phosphorylation and internalization. Tachyphylaxis is a particular problem for vasoconstrictor α1 agonists. However, there are substantial differences in the intensities of desensitization, phosphorylation and internalization among the α1 AR subtypes as comparative studies have shown that α1B and α1D AR subtypes are more desensitized, phosphorylated and internalized in response to norepinephrine than α1A ARs. Therefore, as far as desensitization, phosphorylation and internalization, the general view is that the α1A subtype is much less regulated than the other two subtypes. However, here we show that in sharp contrast to norepinephrine, the acute short exposure to oxymetazoline, an α1A AR selective and low efficacy partial agonist induces robust PKC- and GRK2-dependent α1A AR phosphorylation and internalization, which is accompanied by desensitization both in recombinant receptors expressed in HEK293 cells and in rat native receptors from vascular and non-vascular smooth muscle tissues. Surprisingly, oxymetazoline and other imidazoline containing agonists also internalize α1B ARs, albeit being virtually unable to increase intracellular calcium in cells expressing this receptor. These data show a biased agonism of imidazoline compounds towards the internalization pathway and shed some light on the molecular mechanisms of the tachyphylaxis in the therapeutic effects of these drugs. Financial support: FAPESP, CAPES, CNPq.

Biased agonism and non-canonical functions of peptidergic GPCRs. Claudio M. Costa-Neto Laboratório de Estrutura e Função de Receptores 7TM (GPCRs) Departamento de Bioquímica e Imunologia, Faculdade de Medicina de Ribeirão Preto, Universidade de São Paulo

Vasoactive peptides from the renin-angiotensin (RA) and kallikrein-kinin (KK) systems are classically involved in blood pressure regulation and water–electrolyte balance. Nevertheless, the existence of functional RA and KK systems in different tissues and organs raised the possibility of their involvement in different pathophysiological events. Our group has investigated non-canonical functions for peptides and receptors from the RA and KK systems in different pathological models, such as for inflammation, epilepsies, muscle atrophy, cancer, and others. Our data show that the RA and KK systems have pivotal and distinct roles in different pathological states; and therefore, some of the available drugs that regulate the functionality of these systems might be assayed for an expanded use in the future target in other diseases. The peptides from the RA and KK systems bind to receptors that belong to the family A of G protein-coupled receptors (GPCRs), triggering the classical Gprotein pathway that produces second messengers and functional modulation of downstream proteins. In the last few years however, it has been shown that interaction of GPCRs with beta-arrestins, in addition to mediate the canonical mechanism of receptor desensitization by arrestin-mediated internalization, can also lead to signal transduction. Interestingly, some ligands are able toselectively trigger these alternative pathways, a phenomenon designated as biased or selective agonism, which relies on the idea that GPCRs are able toadopt distinct active conformations that can be stabilized by different ligands. Therefore, in parallel to the above described non-canonical functions, our group has also investigated the structural mechanisms underlying biased agonism. Our data show that biased-agonism does not solely depend on the ligand or thereceptor structure, but depends on the ligand-receptor complex. We suggest that the ligand-receptor complexes can adopt distinct intermediate conformations that are able to trigger either full or biased signaling byrecruitment of distinctscaffold proteins/pathways; and that these active conformations can be stabilized by either specific alterations in the receptor (e.g. post-translational modifications, point mutations) or by specific ligands/drugs. Financial Support: FAPESP, CNPq, CAPES, FAEPA.

Structural insights into agonist-induced activation of G protein-coupled receptors. Xavier Deupi, Ph.D. Condensed Matter Theory Group and Laboratory of Biomolecular Research, Paul Scherrer Institute, Switzerland

G protein-coupled receptors (GPCRs) are a large family of membrane proteins that transmit the information carried by extracellular signals (like natural ligands or therapeutic drugs) into the cell by activating G protein- or arrestin-mediated intracellular signaling pathways. GPCRs are key in cell physiology and constitute one of the most important pharmaceutical targets. Despite their significance, we are just starting to understand the molecular mechanisms by which ligands modulate GPCR activity.

Recent years have seen tremendous breakthroughs in structure determination of GPCRs. For instance, in the period 2008–2011, nine active-like structures of GPCRs have been solved. Among them, we have determined the structure of a mutant light-activated rhodopsin with all the features of the fully active metarhodopsin-II state, which represents so far the most native-like model of an active GPCR (1). This structure, together with the structures of other inactive, intermediate and active states constitutes a unique structural framework on which to understand the conserved aspects of the activation mechanism of GPCRs (2).

In most GPCRs, these activation mechanisms are triggered by ligand binding. Using steered molecular dynamics to simulate the process of ligand entry in beta adrenergic receptors, we have detected a putative secondary binding site along the main entry pathway (3). This transient binding site

may be related to differences in the pharmacological profile between families 1 and 2 of the beta adrenoreceptor family.
Financial support: Swiss National Science Foundation and the ETH Zürich (National Center for Competence in Research in Structural Biology Program). 1. Deupi X et al. (2012). Stabilized G protein binding site in the structure of constitutively active metarhodopsin-II. PNAS, 109(1), 119–124. 2. Deupi X et al. (2011). Structural insights into agonist-induced activation of G-protein-coupled receptors. Current Opinion in Structural Biology, 21(4), 541–551. 3. Gonzalez A. et al. (2011). Molecular Basis of Ligand Dissociation in b-Adrenergic Receptors. PLoS ONE, 6(9), e23815.

Biased inverse agonism at histamine H1 and H2 receptors. **Evidence for an intracellular G-protein kidnapper** Federico Monczor Laboratory of Receptor Pharmacology. Medicinal Chemistry Dpt. Pharmacy and Biochemistry Faculty. University of Buenos Aires.
Signal transduction occurs through different types of receptors, including G-protein coupled receptors (GPCRs). They have a crucial role on physiological and pathophysiological processes resulting the target of more than 25% of therapeutic agents, representing more than 50% of global pharma industry sales. Our group focuses on histamine H1 and H2 receptors that belong to GPCR superfamily, and which ligands (many of them known as antihistamines) are between the top ten used drugs throughout the world.
The simplest theoretical model describing GPCR activation is a two-state model that assumes receptors switch between two conformational states, an inactive conformation, and an active conformation able to couple with the G-protein. In this context, agonists are supposed to stabilize the active conformation, and inverse agonist to stabilize the inactive G-protein uncoupled state. However, a few years ago, this extremely simplified vision was challenged. A purely theoretical model was proposed, assuming that GPCRs could couple to G-protein even in an inactive state, broadening the mechanisms by which ligands can exert its functions.
Based on predictions made on this last model for H1 and H2 receptors, in our lab we experimentally demonstrated the existence of the predicted receptor state coupled to G-protein, but inactive. Intriguingly, this receptor species is able to interfere with the signaling of other GPCRs coupled to the same pathway by a mechanism involving a “molecular kidnapping” of the G-protein. Our results show that this receptor conformation can be spontaneously adopted on cell membrane, can be induced with some point mutations, and can be stabilized by some specific inverse agonists, but not all. This last feature wide the possible effects that a ligand can have, making possible that some inverse agonists not only diminish the basal activity of the specific receptor, but also diminish the activity of other receptors coupled to the same pathway. This unspecific biasing of receptor signaling affecting the activity of other unrelated GPCRs, should be taken into account considering that antihistamines are among the most widely prescribed and over the counter-sold drugs in the world. This work is supported by funding grants from ANPCyT, CONICET, and UBA.

Somatic exocytosis of serotonin. Francisco F. De-Miguel Instituto de Fisiología Celular Universidad nacional Autónoma de México.
Serotonin, a major signaling molecule in the nervous system is released by neurons from extrasynaptic sites in the soma, axon, dendrites and perisynaptic sites. We have studied the mechanism of extrasynaptic serotonin exocytosis in the soma of a classic preparation, serotonergic Retzius neurons of the leech, by combining electrophysiology, imaging and electron microscopy. Our results show that at rest, serotonin-containing dense core vesicles are produced in the perinuclear region and clustered at a distance from the plasma membrane. Electrical stimulation with a train of 10 impulses at 20 Hz induces calcium entry through L channels, which in turn induces the release of calcium from intracellular stores. A centripetal calcium wave with a peak at 600 ms and a decay time constant of 3-5 sec induces ATP synthesis and activates molecular motors that transport about 100 vesicle clusters containing 100-1000 vesicles each along cytoskeletal rails and across the active cortex towards the plasma membrane, where vesicles fuse and release serotonin for minutes after electrical stimulation ended. Once serotonin is released it activates auto-receptors that induce again intracellular calcium release from intracellular stores and sustains release from the following vesicles arriving at the plasma membrane, until the releasable pool of about 20,000 vesicles is exhausted. Upon endocytosis, dense core vesicles are incorporated into multivesicular bodies, that are transported back to the perinuclear region where they are reused for the synthesis of new vesicles. Serotonin released from the soma has glial cells as targets, which incorporate and transport serotonin away. The time course of these effects allows to increase the timing of serotonin signaling in the nervous system and by doing that may produce the characteristic long-lasting behavioral modulatory effects of serotonin. Experiments done in different neuron types releasing different transmitter molecules, including mammalian serotonergic neurons have reproduced some of these results. Therefore the mechanism presented here may represent a more general one for extrasynaptic transmission by neurons. This work was funded by DGAPA-UNAM IN211511 and CONACYT 130031 grants to FFM.

5-HT and mechanisms of defense in animals. Frederico G. Graeff and Hélio Zangrossi Jr. Faculdade de Medicina de Ribeirão Preto da Universidade de São Paulo.
Early pre-clinical evidence has shown that drugs that decrease 5-HT activity release behavior suppressed by punishment in conflict tests. Because conflict tests are reliable animal models of anxiety 5-HT was supposed to enhance anxiety by acting on limbic forebrain structures as well as on the dorsal periaqueductal grey matter (DPAG). However, results with electrical or chemical stimulation of the DPAG showed that 5-HT impairs escape behavior elicited by DPAG stimulation, pointing to an anxiolytic role of 5-HT. To overcome this inconsistency, it was suggested that conflict tests generate conditioned (anticipatory or generalized) anxiety, whereas periaqueductal grey stimulation produce unconditioned aversion, related to panic. It was further suggested that anxiety is enhanced by 5-HT in the forebrain, whereas panic is inhibited by 5-HT in the DPAG. The above hypothesis has been tested in an animal model of anxiety and panic, the elevated T-maze (ETM), which consists of one arm enclosed by walls, transversal to two opposed open arms, all elevated from the floor. The same rat learns to avoid open arms exploration (inhibitory avoidance) and then performs one-way escape from one of the open arms. Direct interventions in the dorsal raphe nucleus (DRN), which sends 5-HT-containing fibers to both the amygdala and the PAG showed that, as expected, decrease of 5-HT output impairs avoidance (anxiolytic effect) and enhances escape (panicogenic effect) in the ETM; increase of 5-HT output does the opposite. Results obtained with microinjection of drugs inside the amygdala and in the DPAG also support the dual role of 5-HT in anxiety and panic. Nevertheless, they cast doubt on the rostrocaudal organization of anxiety and panic in the brain, since some manipulations in the amygdala affected escape while some interventions in the DPAG changed avoidance in the ETM. Further results showed that chronic, but not acute, administration of antidepressants sensitize 5-HT_{1A} and 5-HT_{2A} receptors and increase 5-HT release in the DPAG. This action is likely to mediate the antiescape effect of these drugs in the ETM and, supposedly, their clinical antipanic effect. In addition, 5-HT_{2C} receptors in the basolateral amygdala are down regulated, what may be related to the antianxiety effect of chronic antidepressant treatment. Finally, recent results indicate that 5-HT and

endogenous opioids act synergistically in the DPAG to inhibit ETM escape.

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Morphological basis of neural plasticity in normal animals and animals with neurodegenerative and neuroinflammatory diseases. **Possible mechanistic interrelationships between depressions – Alzheimer disease**. Harry W.M. Steinbusch. Department of Neuroscience, Faculty of Health, Medicine and Life Sciences, Maastricht University, The Netherlands; European Graduate School of Neuroscience (EURON).

Over the past decades, the incidence of age-related, neurodegenerative disorders such as Alzheimer's disease (AD) but also depression has considerably increased. Mood disorders are strongly related to the exposure to stress. The hippocampus is the apex of the stress hormone control mechanism and damage to it may be one way in which stress hormone secretion escapes from inhibitory control in depression. In turn, stress, probably through toxic effects of corticosterone, decreases neurogenesis and cell survival while antidepressants enhance these processes in experimental animals. Therefore, since treatment strategies are not yet available, primary prevention of both age-related, neurodegenerative disorders is of importance. New therapeutic strategies for early detection, prevention or declining the rate of these devastating age-related diseases are being investigated. On the molecular and cellular level, the aging process is known to be associated with an increased amount of free radicals, a decline in nuclear (n) DNA repair capacity, and an accumulation of unrepaired nDNA damage. The accumulation of unrepaired nDNA damage and high intracellular amounts of free radicals are key events in the pathogenesis of AD. Development of techniques for local application of neurotrophic factors which may enhance the survival of the degenerating neurons in AD as observed in various rat and (transgenic or KO-) mice-models. In order to gain more information about the underlying mechanisms that may govern the neurodegeneration, e.g. amyloid plaques, neurofibrillary tangles, and impaired synaptic transmission in AD, a rat dissociation culture model was established that allows mimicking certain aspects of our autopsy findings. In the area of depression. several observations have been made in relation to changes in one particular barin structure: the Dorsal raphe Nucleus (DRN). DRN-related discoveries are tightly connected with important events in the history of neuroscience, for example the invention of new histological methods, the discovery of new neurotransmitter systems and the link between neurotransmitter function, like serotonin and mood disorders. The DRN is further related in the circuit of stress regulated processes and cognitive events. The intermingling with other transmitter systems like nitric oxide and dopamine will be further discussed. The ascending projections and multitransmitter nature of the DRN, and stresses its role as a key target for depression research.

Calcium and reactive oxygen species in acute pancreatitis: **friend or foe?** David N. Criddle Department of Molecular and Cellular Physiology and NIHR Pancreas Biomedical Research Unit, RLBUHT, Institute of Translational Medicine, University of Liverpool

Mitochondrial dysfunction has been implicated as a core feature in the development of acute pancreatitis (AP), a severe and sometimes fatal inflammatory disease caused primarily by excessive alcohol consumption and gallstones and for which there is currently no specific therapy. Precipitants of AP such as bile acids and non-oxidative ethanol metabolites have been shown to disrupt normal calcium signaling and induce sustained cytosolic calcium elevations which lead to mitochondrial depolarisation, loss of ATP production and ultimately pancreatic acinar cell death. Recent evidence suggests that formation of the mitochondrial permeability transition pore (MPTP), modulated by cyclophilin D, may be integral to necrotic cell death pathway activation that leads to AP. However, the precise roles of calcium and reactive oxygen species (ROS) in modulating mitochondrial dynamics and cell death modalities are currently unclear. We have recently demonstrated that ROS generation may exert an important protective role in pancreatic acinar cell death by promotion of apoptosis rather than necrosis, thereby avoiding development of systemic inflammation and potential multiple organ failure. This presentation will focus on recent work carried out in human and murine pancreatic acinar cells and tissue segments using *in vitro* experimental approaches such as confocal imaging, electrophysiology, bioenergetics measurements and molecular techniques as well as the use of diverse *in vivo* models of AP. Particular attention will be given to novel therapeutic targets for disease prevention. Financial Support: Medical Research Council and the National Institute for Health Research (UK)

Inhibition of leukocyte adhesion by fucoidin prevents the severe acute pancreatitis in mice. Ana Carla S Carvalho[1], Ramon B Sousa[1]; Pedro Marcos G Soares[1], David Criddle[2], Ronaldo A Ribeiro[1], Marcellus H L P Souza[1]. 1Department of Physiology and Pharmacology, Federal University of Ceará, Fortaleza/CE, 2Department of Physiology, University of Liverpool

Introduction: Acute pancreatitis, especially severe acute pancreatitis (SAP), is a life-threatening condition characterized by edema, inflammation, hemorrhage and necrosis of the pancreas. Current knowledge shows that interactions between leukocytes and vascular endothelium play an important role in the systemic progression of the inflammatory response of acute pancreatitis, whose entity may determine disease severity and outcome. Considering the role of selectins in neutrophil rolling, and its relationship with tissue damage in pancreatitis, the aim of the present study was to assess the effects of the polysaccharide fucoidin, an P and L-selectin blocker, in severe experimental pancreatitis in mice. Methods: The first model of SAP was induced in Swiss mice by the retrograde infusion of 50 µl of thaurolithocolic acid (TLCS) 3.0% in the pancreatic duct of mice. Four groups were determined (n=6/group): one Saline, one Sham, one group with SAP, and the fourth group with SAP followed by the injection of fucoidin (25 mg/kg, i.v.) twenty minutes before the SAP induction. The second model of SAP consisted by 12 intraperitoneal injections of cerulein (50 µg/kg hourly), another group of animals, fucoidin (25 mg/kg, i.v.) was administered 30 minutes before the first cerulein injection Control saline mice were administered comparable injections of saline solution. The animals were euthanized twenty four hours after the induction of SAP. Blood, pancreas and lung samples were obtained and serum amylase, lipase, IL-1β, TNF-α and nitrite, lung and pancreas myeloperoxidase (MPO) activity were measured. Samples of pancreatic tissue were collected for histological assessment. Experimental protocols were approved by the Institutional Committee on Care and Use of Animals for Experimentation (No. 26/10). Statistical analysis was performed using an ANOVA test.

Results and Discussion: Taurocholate infusion into the pancreatic duct and repeated intraperitoneal administration of caerulein, increased the serum level of amylase (6154±417,6 U/l; 4017±288,1U/l), lipase (865±75,9 UI; 726,3±58,3 UI), pancreatic MPO (7,28±0,85 UMPO/mg; 2,43±0,2 UMPO/mg), lung MPO (7,72±0,86 UMPO/mg; 3,48±0,73 UMPO/mg), nitrite (46,18 ± 8,64 µM; 17,06 ± 1,70 µM), TNF-α (206,9 ± 47,01 pg/ml; 93,50 ± 1,56 pg/ml) and IL-1β (168,2 ± 8,60 pg/ml; 28,89 ± 3,95 pg/ml), compared with Saline group (amylase= 3435±170,7 U/l; 186,9±18,32 U/l; lipase= 449,2±37,90 UI; 153,4±15,05 UI; pancreatic MPO = 2,39±0,27 UMPO/mg; 1,48±0,17 UMPO/mg; lung MPO= 4,94±0,49 UMPO/mg; 1,45±0,27 UMPO/mg; TNF-α= 80,96 ± 36,36 pg/ml; 68,27 ± 9,40 pg/ml; IL-1β= 111,9 ± 3,10 pg/ml; 12,8 ±

5,55 pg/ml; nitrite= 7,81 ± 2,36 µM; 2,38 ± 0,91 µM). Fucoidin decreased significantly (p<0,05) the taurocholate and cerulein-induced increase in serum amylase (3878±519,5 U/l; 2431±82,74 U/l), lipase (488,6±32,71 UI; 455,3±30,91 UI), pancreatic MPO (3,37±1,6 UMPO/mg; 1,31±0,2 UMPO/mg), lung MPO (5,13±0,58 UMPO/mg; 1,39±0,34 UMPO/mg), TNF-α (42,96 ± 17,67 pg/ml; 70,81 ± 3,48 pg/ml), IL-1β (139,1 ± 3,10 pg/ml; 15,07 ± 8,60 pg/ml) and nitrite (22,16 ± 2,97 µM; 6,85 ± 1,49 µM). Histological assessment of the pancreas showed tissue edema, neutrophil infiltration, acinar vacuolization and cell necrosis in TLCS and cerulein treated animals compared with saline group. Pretreatment with fucoidin significantly attenuated the severity of pancreatitis histological damage. Conclusion: Fucoidin reduced the severity of acute pancreatitis in mice, by decreasing neutrophil infiltration and systemic inflammation, suggesting that inhibition of neutrophil infiltration may constitute a promising approach for treatment of this disease. Financial support: CAPES, CNPq- Brazil, The Royal Society, UK. Valores para os grupos = Taurocolato; Ceruleína AMILASE = 6154±417,6 U/l; 4017±288,1U/l; LIPASE = 865±75,9 UI; 726,3±58,3 UI; MPO PÂNC = 7,28±0,85 UMPO/mg tissue; 2,43±0,2 UMPO/mg tissue; MPO PUL = 7,72±0,86 UMPO/mg tissue; 3,48±0,73 UMPO/mg tissue; TNF-α = 206,9 ± 47,01 pg/ml; 93,50 ± 1,56 pg/ml; IL-1β = 168,2 ± 8,60 pg/ml; 28,89 ± 3,95 pg/ml; NITRITO = 46,18 ± 8,64 µM; 17,06 ± 1,70 µM; Valores para o grupo = Fucoidina no modelo Taurocolato; Fucoidina no modelo Ceruleína: AMILASE = 3878±519,5 U/l; 2431±82,74 U/l; LIPASE = 488,6±32,71 UI; 455,3±30,91 UI; MPO PÂNC = 3,37±1,6 UMPO/mg tissue; 1,31±0,2 UMPO/mg tissue; MPO PUL =5,13±0,58 UMPO/mg tissue; 1,39±0,34 UMPO/mg tissue; TNF-α = 42,96 ± 17,67 pg/ml; 70,81 ± 3,48 pg/ml; IL-1β = 139,1 ± 3,10 pg/ml; 15,07 ± 8,60 pg/ml; NITRITO = 22,16 ± 2,97 µM; 6,85 ± 1,49 µM; Valores para o grupo = Salina no modelo Taurocolato; Salina no modelo Ceruleína: AMILASE = 3435±170,7 U/l; 186,9±18,32 U/l; LIPASE = 449,2±37,90 UI; 153,4±15,05 UI; MPO PÂNC = 2,39±0,27 UMPO/mg tissue; 1,48±0,17 UMPO/mg tissue; MPO PUL = 4,94±0,49 UMPO/mg tissue; 1,45±0,27 UMPO/mg tissue; TNF-α = 80,96 ± 36,36 pg/ml; 68,27 ± 9,40 pg/ml; IL-1β = 111,9 ± 3,10 pg/ml; 12,8 ± 5,55 pg/ml; NITRITO = 7,81 ± 2,36 µM; 2,38 ± 0,91 µM

Distinct roles of the neuropeptide substance P and nitric oxide in secretory phospholipase A2-induced pancreatitis. Enilton A. Camargo[a], Soraia K. P. Costa[b] et al. [a]Department of Physiology, Federal University of Sergipe, 49100-000, São Cristóvão, SE, Brazil. [b]Department of Pharmacology, Institute of Biomedical Sciences, University of São Paulo (USP)

Background: Acute pancreatitis (AP) is a worldwide common, painful and inflammatory disease of the pancreas with no effective pharmacological treatment available. On the other hand, nitric oxide is involved in the pancreatic inflammation and lung injury in a controversial way, as demonstrated by others in another models of pancreatitis. Interestingly, previous study from our group showed that the rat common bile duct injection of secretory phospholipases A2 (sPLA2) induces acute pancreatitis, that resembles signs and symptoms similar to those observed in humans, such as plasma extravasation (oedema) in pancreas, neutrophil infiltration in both pancreas and lung, hyperamylasemia and abdominal hyperalgesia, that can be partially protected by substance P receptor antagonist. However, whether nitric oxide (NO) plays a deleterious or a protective role in the abdominal pain seen in AP is still unknown. This study was undertaken to investigate the role of this free radical in the abdominal hyperalgesia and inflammation seen in secretory phospholipase A2 (sPLA2)-induced pancreatitis in the rat. *Methods*: Pancreatitis was induced by injection of venom sPLA2 (300 µg/kg) into the common bile duct of anaesthetised Wistar male rats, previously treated with L-NAME (20 mg/kg, i.v., -10 min), aminoguanidine (50 mg/kg, i.v., -10 min) or saline. After 4 h, both abdominal hyperalgesia and inflammatory parameters were assessed in the pancreas and lung in addition to serum amylase and nitrite/nitrate concentrations. *Results*: injection of sPLA2 significantly increased the concentrations of serum amylase and nitrite/nitrate, in addition to abdominal hyperalgesia and inflammatory response in the pancreas and lung, as characterized by increased MPO activity, plasma extravasation and oedema. Pre-treatment of the animals with either L-NAME or aminoguanidine almost abolished abdominal hyperalgesia and serum nitrite/nitrate concentrations, but failed to suppress local plasma extravasation (oedema), and serum amylase concentration. L-NAME, but not aminoguanidine treatment, increased MPO activity in the pancreas, without affecting the lung, of rats with AP. *Conclusions*: We show for the first time that local (pancreas) iNOS-derived NO plays a functional role in mediating the abdominal hyperalgesia in sPLA2-induced AP, independently of the inflammatory process.

Role Innate immunity and obesity: **the role of MYD88**. Prof Dr Niels Olsen Saraiva Câmara Introduction: Obesity is a complex disorder, affecting individuals of all ages and is characterized by a moderate state of chronic inflammation, with increased levels of several pro-inflammatory cytokines and acute phase proteins that maintain this inflammatory state. Obesity has also been shown to be a risk factor “dose dependent” for morbidity and mortality in sepsis; although, little is known about the specific role of obesity in innate immunity activation, cellular and tissue dysfunction that are observed in sepsis. Our goal is to study the relationship between obesity and the regulation of immune response in sepsis, in order to contribute for the understanding of the mechanisms involved in immune regulation of the inflammatory response of sepsis in obese individuals. Materials and Methods: We used a model of obesity induced by high fat diet in C57BL/6 and MyD88 knockout (KO) mice for 60 days, and then they were submitted to sepsis by caecal ligation and puncture (CLP) with two perforations using 23G needles and sacrificed 24h after sepsis induction. Fat and kidney tissues and serum were collected for analyses. Microbiota was also analyzed. Results: MyD88 KO mice showed higher weight gain and increased adipocyte size and reduced inflammation as compared to wild type mice. After sepsis, these mice were protected with longer survival, decreased of systemic inflammation, less macrophage infiltration in white adipose tissue and decreased gene and protein expression of pro-inflammatory molecules IL-1β, TNF-α, IL-6 and KC. In addition, we observed a significant increase in gene expression of arginase-1 and decreased of MCP1, suggesting a change in macrophage profile. The inflammation in these mice after sepsis appears to be reduced by a significant increase in gene expression of PPAR-γ and its targets, such as Glut4, LPL and FABP4. Up regulation of PPAR- γ seems to inhibit NF-κB pathway and thus inflammation. Microbiota analyses showed that obese MyD88 mice presented decreased of Firmicutes compared with obese WT mice. Conclusions: Here, we concluded that the innate immunity mainly through MyD88 that plays an important role in obesity and inflammatory status in adipose tissue and after a severe inflammatory stimulus. Support: FAPESP 2012/02270-2 and 2011/15682-4; CNPq/Inserm and CNPq/FAPESP/INCT (Complex Fluids INCT) and CEPID-FAPESP (CLEAR).

Involvement of inflammatory mediators in the metabolic homeostasis. Zélia Menezes-Garcia; Marina Oliveira; Renata Lima; Frederico Soriani; Daniel Cisalpino; Leida M. Botion; Mauro M. Teixeira; Danielle da G. de Souza; Adaliene V.M. Ferreira - Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil.

Chronic, low grade inflammation has been observed during the development and maintenance of obesity. It has been proposed that adipose tissue is the primary source of

proinflammatory mediators. Although many studies have been published in this field in the last two decades, the true nature of the inflammatory milieu in adipose tissue has yet to be clarified. In this respect, a question remains: why does adipose tissue become inflamed, and what is the physiological aspect involved in adipose inflammation upon nutrient overload? Here, we have used the platelet-activating factor (PAF) receptor deficient mice with a lower inflammatory response upon different stimuli, to evaluate the effect of nutrient overload on inflammatory and metabolic dysfunction. The present study has the following major findings: (i) the PAF receptor is important for containing diet-induced fat pad expansion; (ii) mice lacking the PAF receptor has a protective role in the development of insulin resistance induced by diet and (iii) the signaling pathway of the PAF receptor is involved in adipose tissue cytokine secretion induced by nutrient overload. Although the pathological features of inflammation in obesity are well understood, the physiological counterparts of such inflammation are unknown. Akin to what is observed in obesity, the acute inflammatory response triggered by infection or injury induces a state of insulin resistance. However, in such cases, there are concomitant reductions in body mass and adipose tissue weight. We, therefore, hypothesized that the inflammatory milieu in adipose tissue counteracts the fat pad expansion induced by nutrient overload. Consistent with this hypothesis, PAF receptor-deficient mice presented with low levels of inflammatory mediators in adipose tissue concomitant with the impairment of lipolysis, heightened lipogenesis and exacerbated expansion of adipose tissue mass. As noted for the PAF receptor-deficient mice, previous studies have shown that the absence of pro-inflammatory mediators or their signaling pathways causes an increase in the body weight and fat mass in humans and mice. Our study contributes to data considering the involvement of inflammation in the induction of insulin resistance and suggests that local inflammation in adipose tissue may be related to tissue remodeling and, consequently, control of fat pad expansion. Financial assistance: Pró-Reitoria de Pesquisa da UFMG, Capes, FAPEMIG and CNPq.

Characterization of gene expression in $CD14^{+}CD16^{-}$, $CD14^{+}CD16^{+}$ and $CD14^{dim}CD16^{++}$ monocyte subsets in obesity. Renovato-Martins M[1,2], Devevre E[1] , Dalmas E[1,] , Bouillot JL[3], Basdevant A [1,4], Fridman W.H[1,] , Barja-Fidalgo C[2], Clement K[1,3], Sautès-Fridman C[1,] Cremer I[1,*] and Poitou C[1,3*]. (1) INSERM, U872, Team 7 Nutriomique and Team 13, Cordeliers Research Center, Paris, F-75006 France; (2) UERJ, Universidade do Estado do Rio de Janeiro; (3) Assistance Publique-Hôpitaux de Paris, Pitié-Salpêtrière Hospital; (4) Assistance Publique-Hôpitaux de Paris, Ambroise Paré Hospital. * Authors contributed equally to this work.

Background: Obesity is associated with a low-grade inflammation in which monocytes play an important role. Three subpopulations of monocytes have been described: classical $CD14^{+}CD16^{-}$ (CM), intermediary $CD14^{+}CD16^{+}$ (IM) and non classical $CD14^{dim}CD16^{++}$ (NCM) monocytes. We previously showed increased percentages and numbers of IM and NCM in obese subjects that decreased with weight loss (Poitou et al. 2011). Aim: To characterize gene expression profile of the monocyte subpopulations in obesity. Subjects and Methods: The CM, IM and NCM of obese subjects (OB) before and after gastric bypass and lean subjects (C) were sorted by flow cytometry. The expression of genes involved in monocyte functions including migration, adhesion, phagocytosis and cytokines production, was analyzed by TLDA and quantitative PCR. Results: The gene expression of CX3CR1 and TLR8 was highly increased in the CM, IM and NCM of the OB group and decreased after surgery. The three subsets displayed different gene expression profiles in the OB group compared to the C group: the NCM expressed high levels of CSF1R, SELPLG and IL1β, the IM were characterized by over-expression of CCR5, TNFα and MCP1 and the CM expressed high levels of CCR2 and CD36. Conclusion: In obese subjects, the three subpopulations display different gene expression pattern of molecules involved in migration, inflammation and antibody capture. CX3CR1 and TLR8 could be considered as a molecular signature reflecting modified functions of monocytes in obesity. Information on Ethical approval: ID Number: NCT00476658; (http://clinicaltrials.gov/ct2/show/NCT00476658?term=poitou&rank=1). Financial Support: AFERO, CNRS, CAPES.

Novel adenosine-based therapeutic strategies to manage brain dysfunction and damage upon epilepsy. Rodrigo A. Cunha. Center for Neurosciences and Cell Biology & Fac.Medicine, Univ.Coimbra, Portugal.

Adenosine is released in an activity-dependent manner and acts as a neuromodulator in brain circuits through activation of inhibitory A1 (A1R) and facilitatory A2A receptors (A2AR). A1R and A2AR control synaptic transmission and plasticity, respectively, and their coordinated action sharpens signal-to-noise ratio (information salience) in neuronal circuits. Adenosine is considered an endogenous anti-epileptic agent because A1R inhibit glutamate release and hyperpolarize neurons. We counteract this notion by reporting that the pharmacological or genetic blockade of A2AR affords a robust protection against kainate-induced neurotoxicity in the rat hippocampus, an experimental model of temporal lobe epilepsy (eTLE) as gauged by a decreased neuronal damage, astrocytic and microglia activation, accompanied by a better preserved synaptic plasticity and spatial-memory performance.

In an effort to determine the mechanism of A2AR-neuroprotection, we first explored the rapid (within 2 hours of eTLE) enhanced density and gain of function of presynaptic A2ARs, which results from a localized translation of A2AR mRNA located in nerve terminals. Accordingly, the selective deletion of A2AR in forebrain neurons (CAM-kinase II-driven deletion of A2AR) attenuated kainate-induced neuronal damage. However, A2AR were also found to be up-regulated in astrocytes upon eTLE. These astrocytic A2AR inhibited the expression and the activity of glutamate transporters. Accordingly, the selective deletion of A2AR in astrocytes (GFAP-driven deletion of A2AR) attenuated kainate-induced neuronal damage. Finally, A2AR were also shown to be located in microglia cells, where A2AR are also up-regulated upon eTLE. Microglia A2AR control the autocrine BDNF-mediated proliferation of microglia and the release of pro-inflammatory cytokines, which we observed to bolster glutamate-induced neurotoxicity in an A2AR-dependent manner; this paves the way to also involve the control of neuro-inflammation as an ancillary mechanism associated with A2AR-mediated neuroprotection. Finally, we observed that A2AR blockade efficiently controlled synaptic sprouting upon eTLE, in accordance with our observations that A2AR control synaptogenesis as well as neuronal migration during development.

Overall, these results question the role of adenosine as an anti-epileptic agent since A2AR-mediated control of neurodegeneration is a key event in the evolving pathogenesis of epilepsy. This occurs through multiple and concurring mechanisms involving an acute A2AR-mediated re-adaptation of glutamate excitotoxicity and a sustained A2AR-mediated control of aberrant plasticity, which prompt A2AR blockade as a novel strategy to control neuronal damage in conditions of temporal lobe epilepsy. (Supported by FCT)

Neuroprotective strategies to manage motor and non-motor symptoms in Parkinson's disease. Rui Daniel S. Prediger, Laboratório Experimental de Doenças Neurodegenerativas – LEXDON – Departamento de Farmacologia, Centro de Ciências Biológicas, Universidade Federal de Santa Catarina,

Resumo: Parkinson's disease (PD) is considered to be a motor system disease and its diagnosis is based on the presence of a set of cardinal motor signs (rigidity, bradykinesia, rest tremor) that are consequence of a pronounced death of dopaminergic neurons in the substantia nigra pars compacta. Nowadays there is considerable evidence showing that non-dopaminergic degeneration also occurs in other brain areas which seems to be responsible for the deficits in olfactory, emotional and memory functions that precede the classical motor symptoms in PD. Dopamine-replacement therapy has dominated the treatment of PD and although the currently approved antiparkinsonian agents offer effective relief of the motor deficits, they have not been found to alleviate the non-motor features as well as the underlying dopaminergic neuron degeneration and thus drug efficacy is gradually lost. Another major limitation of chronic dopaminergic therapy is the numerous adverse effects such as dyskinesias, psychosis and behavioral disturbance. The development of new therapies in PD depends on the existence of representative animal models to facilitate the evaluation of new pharmacological agents before they are applied in clinical trials. We have recently proposed a new experimental model of PD consisting of a single intranasal (i.n.) administration of the proneurotoxin 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP, 1 mg/nostril) in rodents. Our findings demonstrated that rats and mice treated intranasally with MPTP suffer impairments in olfactory, cognitive, emotional and motor functions conceivably analogous to those observed during different stages of PD. We have also identified some pathogenic mechanisms possibly involved in the neurodegeneration induced by i.n. administration of MPTP including mitochondrial dysfunction, oxidative stress, activation of apoptotic cell death mechanisms and glutamatergic excitotoxicity. Therefore, the present presentation attempts to provide a comprehensive picture of the i.n. MPTP model and to highlight recent findings from our group showing its potential as a valuable rodent model for testing novel drugs (such as caffeine, agmatine, atorvastin) that may provide alternative or adjunctive treatment for both motor and non-motor symptoms relief with a reduced side-effect profile as well as the discovery of compounds to modify the course of PD. Apoio financeiro: CNPq, CAPES-COFECUB (681-10), FAPESC - Programa de Apoio aos Núcleos de Excelência (PRONEX – Project NENASC), FINEP (Financiadora de Estudos e Projetos-IBN-Net #01.06.0842-00) and INCT (Instituto Nacional de Ciência e Tecnologia) for Excitotoxicity and Neuroprotection.

Parkin knockout mice model early preclinical phase of Parkinson's disease. **Autores**: Rita Raisman-Vozari **Instituição**: UMR 975 INSERM - Université Pierre et Marie Curie. Centre de Recheche de l'Institut du cerveau et de la moelle épinière -CRICM Thérapeutique Expérimentale de La neurodégénérescence. Hôpital de la Salpêtrière, Paris, France

Parkin mutation is the most prevalent form of familiar Parkinson's disease (PD). The clinical variability of these patients raises the interest of the role of environment in PD development. Here we infused parkin knockout (KO) mice with 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) via intranasal route, which mimics environmental exposure to neurotoxins. The present results indicate that MPTP was effective in inducing Parkinsonism related features, through D-amphetamine challenge, depletion of striatal dopamine (DA) and metabolites, and the death of neurons in the substantia nigra positively marked for tyrosine hydroxylase (TH) and DA transporter (DAT). Parkin KO mice showed no differential vulnerability to neurotoxicity induced by intranasal MPTP administration, although they presented lower levels of GFAP in the substantia nigra, which could be indicative of a reduced neuroinflammation in such animals. However, Parkin mutant mice displayed a number of behavioral and biochemical changes which reproduce some of the presymptomatic aspects of PD. Therefore, Parkin KO mice provide a valuable tool to better understand some of the preclinical deficits observed in patients with PD and to further examine the potential compensatory mechanisms that prevent the onset of a parkinsonian phenotype and which could provide new strategies for neuroprotection. Financial support: CNPq, CAPES-COFECUB (681-10), and INSERM.

Mediators of leukocyte recruitment and pain in gout arthritis Flavio Almeida Amaral (UFMG)

Introduction: Deposition of monosodium urate (MSU) crystals in the joint promotes an intense inflammatory response and pain. MSU induces triggers activation of the NLRP3 inflammasome. We have evaluated the role of the NLRP3 inflammasome and the cross of this system with TNF in a murine model of gout induced by injection of MSU crystals in the knee joint of mice. Methods: Wild type (WT) mice and mice deficient in TNF-α, 5-Lipoxygenase, and inflammasome-associated components were used. Neutrophil influx, cytokine production (TNF-α, IL-1β, CXCL1) (ELISA), intravital microscopy and hypernociception were evaluated. Cleaved caspase-1, MIF (Western Blot) and production of reactive oxygen species (ROS) (fluorimetric assay) were analyzed in macrophages. Results: Injection of MSU crystals in the knee joints of mice induced neutrophil influx and neutrophil-dependent hypernociception. TNF-α was detected following MSU injection. In this context, the membrane form of TNF-α contributes to the initiation of inflammation via synthesis of pro-IL-1β at synovial tissue. MSU crystals-induced neutrophil influx was CXCR2-dependent and relied on the induction of CXCL1 in a NLRP3/ASC/Caspase-1/IL-1β/MyD88- dependent manner. LTB4 was produced rapidly after injection of MSU, and was necessary for caspase-1-dependent IL-1β production and consequent release of CXCR2-acting chemokines *in vivo*. *In vitro*, macrophages produced LTB4 after MSU crystals and LTB4 was relevant for MSU crystals-induced IL-1β maturation. Mechanistically, LTB4 drove MSU crystals-induced production of ROS and ROS-dependent activation of the NLRP3 inflammasome. The cytokine MIF facilitates the inflammatory response via production of the chemokine CXCL1, neutrophil recruitment and hypernociception. Conclusion: We show the role of the NLRP3 inflammasome in mediating MSU crystals-induced joint inflammation and hypernociception, and highlight a previously unrecognized role of LTB4 in driving NLRP3 inflammasome activation in response to MSU crystals both *in vitro* and *in vivo*. The cytokine TNF is necessary for the production of pro-IL-1β, whereas MIF facilitates production of chemokines which drive neutrophil influx.

Role of IL-33/ST2 signaling on the genesis of neuropathic pain. Waldiceu A Verri, Jr Departamento de Ciências Patológicas, CCB, Universidade Estadual de Londrina

Interleukin-33 (IL-33) belongs to IL-1 family of cytokines and signals through ST2 receptor. We have shown that IL-33/ST2 mediates hyperalgesia and neutrophil recruitment in a mice model of rheumatoid arthritis. Furthermore, the mechanisms triggered by IL-33/ST2 signaling involve the activation MAP (mytogen-activated protein) kinases and production of other cytokines. These mechanisms participate in the development of other conditions such as neuropathic pain. Therefore, it was addressed the role of IL-33/ST2 signaling in chronic constriction injury (CCI)-induced neuropathic pain in mice. Mechanical hyperalgesia was evaluated using an electronic version of von Frey filaments; the participation of IL-33/ST2, TNFα, IL-1β and MAP kinases was investigated using pharmacological tools, deficient mice, behavioral testing, ELISA and/or western blot assays. CCI induced IL-33 production in the spinal cord (L4-L6) and CCI ST2 deficient (-/-) mice presented reduced mechanical hyperalgesia compared to CCI control wild type (Balb/c) mice. The intrathecal (it) injection of IL-33 induced hyperalgesia and enhanced CCI-induced hyperalgesia in a ST2-dependent

manner. The mechanical hyperalgesia induced by it injection of TNFα or IL-1β was inhibited in ST2-/- mice as well as TNFα and IL-1β induced IL-33 production in the spinal cord. In turn, IL-33-induced hyperalgesia was reduced in TNFR1-/- and IL-1ra-treated mice as well as IL-33 induced the production of TNFα and IL-1β in the spinal cord and CCI induced TNFα and IL-1β production in a ST2-dependent manner. IL-33-induced hyperalgesia was dependent on MAP kinases since inhibitors of p38, JNK and ERK reduced IL-33 hyperalgesia and CCI ST2-/- mice presented reduced phosphorylation of MAP kinases compared to CCI WT mice. Therefore, IL-33/ST2 signaling mediates CCI-induced neuropathic pain by activating MAP kinases and inducing hyperalgesic cytokines production in the spinal cord. Thus, targeting IL-33-triggered mechanisms is a conceivable approach to reduce neuropathic pain. Financial support: IASP Early Career Research Grants Program funded by Scan/Design by INGER & JENS BRUUN Foundation, CNPq, CAPES, FAPESP, SETI/Fundação Araucária and Governo do Estado do Paraná

Development of novel Nav1.8 channel blocker for pain control, **is it possible**? **Autor**: Rodolfo do Couto Maia. Laboratório de Avaliação e Síntese de Substâncias Bioativas (LASSBio) - Universidade Federal do Rio de Janeiro (UFRJ).

The healing and relief of chronic pain conditions have proved one of the greatest clinical challenges in improving the quality of contemporary life. Traditionally, some drugs have been used in therapy for the alleviation of pain symptoms associated with these conditions. However, none of these drugs are able to offer an absolute relief of pain, in addition to having side effects that limit their ongoing use. A major cause for this failure is the fact that none of these drugs have been designed exclusively for the treatment of these diseases, which explains the appearance of severe side effects often associated with its main therapeutic targets. Since the understanding of the pathophysiology basis of these chronic conditions has advanced some molecular targets began to be identified as possibly responsible for the development and maintenance of pain stimuli in these conditions. The ability of drugs such as carbamazepine and lidocaine to produce chronic pain relief at some extent has highlighted the contribution of voltage-gated sodium channels for the treatment of pain. Thus, research on the subtypes of these channels increased demonstrating that the subtypes present in sensory neurons could represent new potential therapeutic targets for the control of chronic pain. The Nav1.8 subtype is of particular interest because it is exclusively expressed in neurons of the dorsal root ganglion and is responsible for the major part of the TTX-resistant sodium current. Additionally, some studies have showed the importance of this subtype in the development and maintenance of neuropathic and inflammatory pain. The high homology between channel subtypes, added to the lack of knowledge about the three-dimensional structures of these proteins, represent major obstacles in the design and development of new drug candidates that act selectively on these subtypes. These concerns are the main factors that generate doubts about the real therapeutic applicability that the modulation of these channels may offer in fact. Financial support: CNPq, INCT de Fármacos e Medicamentos, FAPERJ, CAPES.

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