



ANAIS DO XVIII
ENCONTRO CIENTÍFICO
DO INSTITUTO BIOMÉDICO

2018

UNIVERSIDADE FEDERAL FLUMINENSE

INSTITUTO BIOMÉDICO

ANAIS DO XVIII ENCONTRO CIENTÍFICO DO INSTITUTO BIOMÉDICO

04 a 07 de Junho de 2018

VII Jornada Científica de Biomedicina
VI Workshop de Microbiologia e Parasitologia Aplicadas
I Workshop do Programa de Pós-Graduação em Ciências Biomédicas
II Concurso de Fotografia Científica do Instituto Biomédico



Niterói - RJ
2018

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PREFÁCIO

Os Anais do XVIII Encontro Científico do Instituto Biomédico – XVIII ECIB, divulgam os trabalhos apresentados no evento que ocorreu de 4 a 7 de junho de 2018, no Instituto Biomédico da Universidade Federal Fluminense (UFF), Niterói – RJ. Esta foi uma edição especial do evento, pois fez parte das comemorações do Jubileu de Ouro do Instituto Biomédico e dos 15 anos da primeira turma do Curso de Biomedicina de Niterói.

O ECIB é um evento tradicional bianual inserido na área da saúde, agrárias e biológicas dentre outras, sendo um dos principais veículos de divulgação da produção técnico-científica do Instituto Biomédico da UFF, proporcionando a interação da comunidade acadêmica, pesquisadores, professores, estudantes e profissionais atuantes nas diversas áreas de concentração. Além disso, promove interação e acolhe produção científica, extensionista e artística de outras Instituições interessadas. No ano de 2018, valorizando as propostas de internacionalização, inovou como evento regional, solicitando a submissão de resumos em inglês, propiciando aos participantes, principalmente em graduação, novas vivências.

O XVIII ECIB teve como principais objetivos:

- Debater os desafios da pesquisa na área da saúde, incorporando informações para intensificar o desenvolvimento científico;
- Ampliar o intercâmbio de informações e de ideias entre estudantes, docentes, pesquisadores, profissionais, empresas e instituições;
- Estabelecer uma ligação entre estudos acadêmicos e suas aplicações, possibilitando aos participantes conhecer mais profundamente as metodologias utilizadas e a produção das universidades na área da saúde;
- Debater os temas relevantes da área, abordando aspectos referentes ao ensino, pesquisa, extensão, exercício profissional e questões institucionais;
- Divulgar a produção técnico-científica da área, contribuindo, assim, para a difusão do avanço técnico e científico.
- Promover uma sessão cultural, com a realização de concurso de fotografia científica e exposição artística

A publicação *online* dos Anais do XVIII Encontro Científico do Instituto Biomédico pretende dar visibilidade ao conteúdo científico produzido neste evento, criando uma memória que poderá ser acessada por todos os interessados.

PREFACE

The Annals of the XVIII Scientific Meeting of the Biomedical Institute - XVIII ECIB, announce the papers presented at the event that took place from June 4 to 7, 2018, at the Biomedical Institute of the Federal Fluminense University (UFF), Niterói - RJ. This was a special edition of the event, as it was part of the Golden Jubilee celebrations of the Biomedical Institute and the 15 years of the first group of the Biomedicine Course of Niterói.

The ECIB is a traditional biannual event in the health, agrarian and biological areas, among others. It is one of the main vehicles for divulgation of the technical and scientific production of the UFF Biomedical Institute, providing the interaction of the academic community, researchers, teachers, students and professionals working in the various areas of concentration. In addition, it promotes interaction and welcomes scientific, extension and artistic production of other interested institutions. In 2018, valuing the proposals of internationalization innovated as a regional event, requesting the submission of abstracts in English, giving participants, especially in undergraduate courses a new experience.

The XVIII ECIB had as main objectives:

- Discuss the challenges of health research by incorporating information to enhance scientific development;
- Expand the exchange of information and ideas among students, teachers, researchers, professionals, companies and institutions;
- Establish a link between academic studies and their applications, enabling participants to learn more about the methodologies used and the production of the universities in the area of health;
- Discuss the relevant topics in the area, addressing aspects related to teaching, research, extension, professional practice and institutional issues;
- Disseminate the technical-scientific production of the area, thus contributing to the dissemination of technical and scientific progress.
- To promote a cultural session, with the accomplishment of scientific photography contest and artistic exhibition.

The online publication of the Annals of the XVIII Scientific Meeting of the Biomedical Institute intends to give visibility to the scientific content produced in this event, creating a memory that can be accessed by all interested parties.

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XVIII ECIB - Encontro Científico do Instituto Biomédico
 VII Jornada Científica de Biomedicina da Universidade Federal Fluminense
 VI Workshop de Microbiologia e Parasitologia Aplicadas
 I Workshop do Programa de Pós-Graduação em Ciências Biomédicas
 II Concurso de Fotografia Científica do Instituto Biomédico

PROGRAMAÇÃO - PROGRAM

HORÁRIO	4/06/2018 (segunda-feira)	
10h – 13h	Credenciamento e entrega de material Local: Hall do Instituto Biomédico	
13h – 17h	Recepção e suporte aos palestrantes de minicursos Local: Hall do Instituto Biomédico e Secretaria do ECIB	
13h – 17h	Cine Clube DST: A Vida Imortal de Henrietta Lacks Moderador: Prof. Mauro Romero L. Passos (DST/MIP/UFF) Debatedores: Prof. Dennis de Carvalho (UNESA e UVA), Prof. Roberto Salles (MIP/UFF), Prof. Renato de Souza Bravo (MMI/UFF) Local: Auditório do Instituto Biomédico	
13h – 17h	Cursos	
HORÁRIO	5/06/2018 (terça-feira)	
8h – 16h	Credenciamento e entrega de material Local: Hall do Instituto Biomédico	
8h – 10h	Cursos	
9h30m – 10h 10h – 10h 30m	Coquetel de abertura Abertura do Evento - Prof. Otilio Machado Pereira Bastos - Diretor do Instituto Biomédico Local: Auditório do Instituto Biomédico	
10h30m – 12h	Conferência de Abertura - CRISPR: a ferramenta genética que vai transformar o futuro Moderador: Profa. Helena Rodrigues Lopes (MIP/UFF) Palestrante: Prof. Felipe Piedade Gonçalves Neves (MIP/UFF) Local: Auditório do Instituto Biomédico	
12h – 13h	ALMOÇO	
13h – 14h	Exposição e avaliação de Pôsteres (1º dia)	
14h – 15h	Palestra - Repensando a psiquiatria e saúde mental: objeto de estudo, diagnóstico e prática clínica Moderador: Profa. Tania Gouvêa Thomaz (MFL/UFF)	Palestra - Desafios da pós-graduação: a perspectiva do aluno Moderador: Jessika Geisebel Oliveira Neto (PPGCB/UFF) Palestrantes: Helena Miguens (PPGCB) Local: Sala 5

	Palestrante: Dr. Stephan Malta Oliveira (HUAP/UFF) Local: Auditório	
15h – 15h15m	Coffee Break.	
15h30m – 17h	<p>Mesa Redonda - Nutrição e obesidade Moderador: Prof. D'Angelo Magliano (MMO/UFF)</p> <p>Participantes e tema: - Profa. Sandra Barbosa (UERJ) – Jejum Intermitente - Profa. Isabele Bringhenti (UFJF) – A influência dos alimentos funcionais sobre a obesidade - Profa. Bianca Gregório (UERJ) - Programação Metabólica Local: Auditório</p>	<p>Mesa Redonda - Alimentos ultra processados: o perigo nas letras miúdas Moderador: Profa. Liana Portugal (MFL/UFF)</p> <p>Participantes e tema: - Profa. Isabel Antunes (MFL/UFF) – Neurociências e Saúde Pública: efeito de advertências sobre o impacto emocional de alimentos ultra processados - Profa. Patrícia Henriques (Faculdade de Nutrição/UFF) – Sistema alimentar, práticas alimentares e obesidade infantil Local: sala 5</p>
17h – 19h	Cursos	
9h – 19h	Exposição de fotografias	
HORÁRIO	6/06/2018 (quarta-feira)	
8h – 16h	Credenciamento e entrega de material	
8h - 10h	Cursos	
9h – 10h	<p>Palestra - Aspectos microbiológicos na fabricação de cerveja artesanal Moderador: Profa. Marcia S. Pinheiro (MIP/UFF) Palestrante: Prof. Marco Antonio Lemos Miguel (UFRJ) Local: Auditório</p>	<p>Palestra - Biologia do desenvolvimento na pesquisa biomédica Moderador: Prof. D'Angelo Magliano (MMO/UFF) Palestrante: Profa. Helena Araújo (UFRJ) Local: sala 5</p>
10h15m -10h30m	Coffee-Break	

10h30m -12h	<p>Mesa Redonda - Desafios da reprodução assistida Moderador: Profa. Carla Lancetta (MMO/UFF) Participantes e tema: - Dr. Roberto Antunes (Fertipraxis e UFRJ) – Gestão de clínica de reprodução - Dra. Fabiane Souza Gomes (Instituto Ideia Fértil SP) – Manejo do paciente - Caio Werneck (Vida Centro de Fertilidade) – Manipulação de embriões</p> <p>Local: Auditório</p>	<p>Mesa Redonda - Microbiologia de alimentos Moderador: Profa. Adriana Corrêa (MIP/UFF) Participantes e tema: - Dra. Marize Pereira Miagostovich (Fiocruz) – Norovírus em alimentos - Dr. Andre Muniz Afonso (ANVISA) – Segurança dos alimentos e Vigilância Sanitária no Porto do Rio de Janeiro - Profa. Marcia Soares Pinheiro (MIP/UFF) – <i>Salmonella</i> spp. em produtos cárneos</p> <p>Local: sala 5</p>
12h – 13h	ALMOÇO	
13h – 14h	Apresentação oral de trabalhos selecionados – Local: sala 8 Exposição e avaliação de Pôsteres (2º dia)	
14h – 15h	Palestra - Atividade física e saúde Moderador: João Dario (PPGCB) Palestrante: Prof. Antonio Claudio Nobrega (MFL/UFF) Local: Auditório	Palestra - Caminhos para sua carreira: inovação em tecnologia a serviço da ciência Moderador: Prof. Felipe Piedade Gonçalves Neves (MIP/UFF) Palestrante: Heitor Barros Local: sala 5
15h – 15h15m	Coffee Break	
15h30m – 17h	Mesa Redonda - Casos Clínicos em DST, a importância do diagnóstico laboratorial Moderador: Mauro Romero Leal Passos (MIP/UFF) Participantes e tema: - Prof. Hugo Boechat (DST/MIP/UFF) – Corrimento uretral - Prof. Tegnus Vinícius (DST/MIP/UFF) – Feridas genitais em crianças	Mesa Redonda - Ética Moderador: Profa. Elisabeth Marostica (MFL/UFF) Participantes e tema: - Prof. João Andrade Leal Sales Jr (UFRJ) – Bioética clínica: reflexões - Prof. Ismar Araújo (MFL/UFF) – Ética profissional Local: sala 5

	- Prof. Dennis de Carvalho (UNESA e UVA) – Lesões orais - Prof. Mauro Romero (DST/MIP/UFF) – Corrimento vaginal Local: Auditório	
17h – 19h	Cursos	
9h – 19h	Exposição de fotografias	
HORÁRIO	7/06/2018 (quinta-feira)	
8h – 16 h	Credenciamento e entrega de material	
8h – 10h	Cursos	
9h – 10h	Palestra - Suscetibilidade genética às infecções virais Moderador: Profa. Carmen Baur Vieira (MIP/UFF) Palestrante: Dra. Marcia Terezinha Baroni (Fiocruz) Local: Auditório	Palestra - Proposta de ferramenta da qualidade para laboratórios de pesquisa, ensino e desenvolvimento tecnológico Moderador: Profa. Ana Maria Pinto (MIP/UFF) Palestrante: Dr Waldemar de Souza (Inmetro) Local: sala 5
10h15m – 10h30m	Coffee-Break	
10h30m – 12h	Mesa Redonda - Microbioma na saúde e na doença Moderador: Profa. Renata F. Rabello (MIP/UFF) Participantes e tema: - Profa. Isabelle Mazza (Instituto de Biologia/UFF) - Microbioma e obesidade - Prof. Leandro Lobo (UFRJ) - O eixo cérebro-intestino-microbiota - Profa. Rosana Ferreira (UFRJ) - Metabólitos produzidos pela microbiota como fonte de novas terapias Local: Auditório	Mesa Redonda - Mulheres na Ciência Moderador: Profa Karin Calaza (MFL/UFF) Participantes e tema: - Profa. Leticia de Oliveira (MFL/UFF) - Mulheres na ciência: Forças invisíveis que influenciam a representatividade feminina - Profa. Andrea Latge (Instituto de Física/UFF) - Representatividade feminina nas áreas exatas. - Profa. Ana Paula Miranda (Departamento de Antropologia/UFF) - A dimensão de gênero na ciência no Estado do Rio

		de Janeiro: temas e protagonismos. Local: sala 5
12h – 13h	ALMOÇO	
13h – 14h	Atividade cultural	
14h – 15h	Palestra - Febre Amarela no Brasil Moderador: Profa. Silvia Cavalcanti (MIP/UFF) Palestrante: Dr Alex Pauvolid-Corrêa (Fiocruz) Local: Auditório	Palestra - Atuação do biomédico na perícia criminal Moderador: Prof. Ronald Marques (MGB/UFF) Palestrantes: Livia Pinheiro (Instituto de Criminalística Carlos Éboli) – Perícia interna Livia Barroso (Instituto de Criminalística Carlos Éboli) – Perícia externa Local: Sala 5
15h – 15h15m	Coffee Break	
9h – 15h	Exposição de fotografias	
15h30m – 17h	Cerimônia de Encerramento e Premiações Local: Auditório	
17h	Coquetel de encerramento	

CURSOS

DATA: 04/06/18

HORÁRIO: 13h as 17h

- Parâmetros Microbiológicos da Água de Consumo e de Recreação – Profa. Marcia Soares Pinheiro e Profa. Helena Rodrigues Lopes
- Diagnóstico coproparasitológico - Prof. Alynne da Silva Barbosa, Profa. Cláudia Maria Antunes Uchôa, Prof. Otilio Machado Pereira Bastos e Laís Verdán Dib
- ASM Workshop de comunicação e divulgação científica – Profa. Tatiana de Castro Abreu Pinto
- Técnicas de sequenciamento de DNA – Profa. Rosana Rocha Barros
- Aplicação de métodos sorológicos em Medicina Veterinária - Prof. Walter Lilenbaum, Dr. Gabriel M.S. Martins, Thaís Brasil Silveira, Lucas F. L. Correia. Bruno Cabral Pires e Anahí S. Vieira

DATA: 05/06/18

HORÁRIO: 8h as 10h

- Aplicação de métodos sorológicos em Medicina Veterinária - Prof. Walter Lilenbaum, Gabriel M.S. Martins, Thaís Brasil Silveira, Lucas F. L. Correia, Bruno Cabral Pires e Anahí S. Vieira
- Análise quantitativa de imagens histológicas por estereologia: da teoria à prática. Profa Thereza Bargut e Dra. Eliete Frantz
- Novas terapias para o combate de infecções por bactérias multirresistentes. Profa. Renata F. Rabello e Profa. Julia P. Albuquerque

DATA: 05/06/18

HORÁRIO: 17h as 19h

- Neuroanatomia das emoções - Prof. Roberto Godofredo Fabri Ferreira
- Resistência Bacteriana: Detecção Laboratorial e Perspectivas Futuras – Profa. Claudia Rezende Vieira de Mendonca Souza
- Transtornos alimentares: como prevenir – Profa. Luciana Reis Malheiros
- Mitos e realidades sobre Produtos de Origem Animal - Prof. Antonio Filipe Braga da Fonseca

DATA: 06/06/18

HORÁRIO: 8h as 10h

- Aplicação de métodos sorológicos em Medicina Veterinária - Prof. Walter Lilenbaum, Gabriel M.S. Martins, Thaís Brasil Silveira, Lucas F. L. Correia, Bruno Cabral Pires e Anahí S. Vieira
- Análise quantitativa de imagens histológicas por estereologia: da teoria à prática - Profa Thereza Bargut e Dra. Eliete Frantz
- Novas terapias para o combate de infecções por bactérias multirresistentes. Profa. Renata F. Rabello e Profa. Julia P. Albuquerque

DATA: 06/06/18

HORÁRIO: 17h as 19h

- Neuroanatomia das emoções- Prof. Roberto Godofredo Fabri Ferreira
- Parâmetros Microbiológicos da Água de Consumo e de Recreação – Profa. Marcia Soares Pinheiro e Profa. Helena Rodrigues Lopes
- Resistência Bacteriana: Detecção Laboratorial e Perspectivas Futuras – Profa. Claudia Rezende Vieira de Mendonca Souza
- Transtornos alimentares: como prevenir – Profa. Luciana Reis Malheiros
- Mitos e realidades sobre Produtos de Origem Animal – Prof. Antonio Filipe Braga da Fonseca

DATA: 07/06/18

HORÁRIO: 8h as 10h

- Novas terapias para o combate de infecções por bactérias multirresistentes - Profa. Renata F. Rabello e Profa. Júlia P. Albuquerque

APRESENTAÇÃO ORAL – ORAL PRESENTATION

AREA: EXTENSION

EX04. THE BRAIN AND THE SENSES

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Introduction: The use of interactive and innovative approaches for teaching the nervous system in schools is still very limited, which contributes to make the understanding difficult and discouraging. **Objective:** This extension project aims to offer the basic neuroscience knowledge for students, specifically about the brain and the five senses in an enjoyable and meaningful way. **Methods:** Sixty-four students from municipal schools with ages between 13 and 17 participated in this activity, which was developed in the Alberto Luiz Coimbra Institute for Graduate Studies and Research in Engineering (COPPE), Federal University of Rio de Janeiro (UFRJ). In a one-hour presentation, an interactive class was presented containing theoretical and practical parts about the five senses. Active approaches were carried out, specifically video exposure and questions for students, practical activities related to attentional blindness, optical illusions, gustatory and olfactory integration. At the end, students were asked to fill in a questionnaire for the evaluation of the activity. **Results:** Questionnaire analyzes showed that 89% of students considered that interactive classes would be more interesting to learn and 91% recognize that this interactive model should be more used at school. Some students made comments like: "I want more activities like that at my school". **Conclusion:** This project has been very well accepted by students. In fact, it was desired by many students that interactive classes might be performed more frequently. In addition, this project suggests that leaving the laboratory, sharing knowledge used in the academy with society, instigates new questions and makes learning more interesting.

Key words: Education; Five sense; Another approach

APRESENTAÇÃO ORAL – ORAL PRESENTATION

AREA: OTHERS

OT05. TGF- β REGULATES EPITHELIAL PLASTICITY AND ASSOCIATED FEATURES IN PC3 METASTATIC PROSTATE CANCER CELLS BY DOWNREGULATING OSTEOPONTIN ISOFORMS EXPRESSION

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Introduction: During metastatic cascade, tumor cells oscillate between epithelial and mesenchymal features to invade other tissues or to establish secondary tumors. Total osteopontin (OPN) has been described as a master regulator of cell plasticity. However, the contribution of each OPN splicing isoforms (OPN-SI) and the associated aberrant splicing regulation is currently unknown. **Objective:** This work aimed to elucidate how TGF- β modulated the epithelial plasticity in PC3 metastatic prostate cancer (PCa) cells and the related expression pattern of OPN-SI, splicing regulators and epithelial mesenchymal (EMT) markers. **Methods:** PC3 cells were treated with 10ng/mL of TGF- β for 48h and the expression of OPN-SI, SR/hnRNP splicing regulators and EMT markers were analyzed by real time PCR or immunofluorescence. Cell functional assays evaluated cell migration, adhesion, circularity and cytotoxicity. **Results:** PC3 cells treated with TGF- β exhibited a predominant epithelial phenotype, besides displaying a significant downregulation of OPN-SI and most tested SR/hnRNP splicing regulators. We also found a significant decrease on cell migration, as opposed to increased adhesion, circularity and cytotoxicity in response to beta-lapachone treatment. **Conclusion:** Our data evidence that in response to TGF- β , PC3 cells are induced to acquire intermediate-EMT features, with a predominance of an epithelial phenotype. These data are in accordance to a model in which TGF- β signals to metastatic cells to acquire epithelial features, in order to reach and adhere secondary metastatic sites. We hypothesize that associated OPN-SI downregulation could favor inhibition of cell mesenchymal features, in order to facilitate cell anchorage and adhesion at distant metastatic sites.

Key words: Osteopontin; Prostate cancer; Cell plasticity

APRESENTAÇÃO ORAL– ORAL PRESENTATION

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP11. RESISTANCE PROFILE OF *Escherichia coli* STRAINS ISOLATED FROM POULTRY, POULTRY MEAT AND SOIL

Campelo DFC¹, Albuquerque JP¹, Pinheiro MS¹, Souza RM², Ribeiro AGP², Orsi, GL¹, Barbosa, AV¹, Bonelli, RR³, Botelho, LAB³, Cerqueira AMF¹

¹Universidade Federal Fluminense; ²Empresa de Pesquisa Agropecuária do Estado do Rio de Janeiro (PESAGRO-RIO); ³Universidade Federal do Rio de Janeiro

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Introduction: Extra-intestinal *Escherichia coli* (ExPEC) are relevant frequently multiresistant human pathogens. Several data pointed to animals, specially poultry, as reservoirs of such strains to man. **Objective:** To evaluate the resistance and multiresistance (MDR) profile of *E. coli* strains isolated from poultry feces (P), raw poultry meat (PM) and soil from poultry breeding sites (S) samples. **Methods:** An amount of 262 strains isolated from P (n=148), PM (n=101), and S (n=13) were submitted to disk diffusion tests with 14 antimicrobials and phenotypic and genotypic assays to search ESBL and AmpC production. **Results:** Non-susceptibility to at least one antimicrobial occurred in 230 (87.8%) strains ranging from 2.3% for ceftazidime to 40.8% for cotrimoxazole. MDR was observed in 32,4%, 68% and 84,6% strains from P, PM, and S, respectively. Higher values of non-susceptibility to more than four antimicrobials as well as MDR were found in strains isolated from PM when comparing to P strains (p<0,0001). Thirteen ESBL strains were phenotypically detected and presented the genes *bla*TEM/*bla*CTX-m-1 (1), *bla*TEM/*bla*CTX-m-2 (1), *bla*TEM ctx-m-8 (1), *bla*CTX-m-1 (2), and *bla*CTX-m-2 (7). Thirteen AmpC strains were also observed and presented the gene *ebc* genotype (3). The ESBL genes *shv* and *ges* and AmpC genes *acc*, *dha*, *fox* and *cit* were not detected. **Conclusion:** A high resistance profile, including MDR, as well as ESBL and AmpC strains are circulating in *E. coli* strains from P, PM and S origin, reinforcing the risk of transmission of these potentially ExPEC strains and/or resistance genes to man.

Key words: *Escherichia coli*; Multiresistance; Poultry

APRESENTAÇÃO ORAL – ORAL PRESENTATION

AREA: RESEARCH IN MORPHOLOGY

MO03. ANTIOXIDANT ACTION OF ALPHA-LIPOIC ACID ON DIABETIC RATS BLADDER

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Introduction: The tissue damage caused by hyperglycemia is related to the increase of oxidative stress. Alpha-lipoic acid (ALA) is a powerful antioxidant, which is most often shown as an alternative to insulin therapy, with low cost and without contraindications. **Objective:** To evaluate the effects of dietary supplementation with ALA on the bladder morphology of animals with Diabetes induced by Streptozotocin (STZ). **Methods:** Forty Wistar rats were divided into 4 groups and used for the study: Control Group, with casein-based control diet; Lipoic Control Group, with added diet of ALA; Diabetic Group Control, diabetic rats, with control diet; Diabetic Lipoic Group, diabetic rats with ALA diet. For the induction of Diabetes, 20 animals received a single intraperitoneal injection of STZ. After this administration, glycemia was measured weekly in all animals, respecting fasting until the end of the experiment. After the establishment of Diabetes, all animals were euthanized, the bladders were collected, processed for inclusion in paraffin and stained for morphological and morphometric evaluation. For statistical analysis, the univariate ANOVA with the Tukey-Kramer test was used. **Results:** Histomorphometric data for the epithelial height of the groups tested were expressed as mean and standard deviation. It was observed that there was a slight increase in epithelial height in the diabetic groups. **Conclusion:** The chronic hyperglycemia caused a slight increase in the bladder epithelium, but it was not possible to demonstrate a significant effect on epithelial height. New analyzes will be carried out to verify the differences between groups in muscle and connective tissues.

Key words: Diabetes; Morphology; Antioxidants

APRESENTAÇÃO ORAL – ORAL PRESENTATION

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP20. NUTRITIONAL RED TRAFFIC-LIGHT LABEL INFLUENCES THE INTENTION TO CONSUME ULTRA-PROCESSED FOOD AND DRINK PRODUCTS

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Introduction: Cancer cases are linked to poor dietary habits and obesity. Such diets often include ultra-processed foods, which are marketed with heavy advertisement. Furthermore, consumers cannot easily identify the nutritional content of such products. The nutritional traffic light label (TLL) was designed to provide a simplified information on nutritional content by using colour-coding. It classifies nutrient levels of sugar, sodium, trans fat and saturated fat as high, medium or low using the colours red, yellow and green, respectively. Thus, it may aid in making healthier food choices.

Objective: This work investigates whether TLL reduces the consumers' reported intention to eat or drink ultra-processed products, considering individual differences regarding hunger states. **Methods:** Undergraduate students viewed pictures of ultra-processed food and drink products, each one preceded by a TLL (red, yellow or green). After the presentation of each picture, the participants were asked to rate their intention to consume the ultra-processed products depicted by the picture on a scale. Before the beginning of the experiment, the participants rated their hunger state in a specific scale. **Results:** When previously exposed to green and yellow TLL, hunger ratings positively correlated with intention to consume ratings. However, this correlation was not significant when the volunteers were shown the pictures preceded by the red TLL. **Conclusion:** The red TLL weakened the influence of hunger on the intention to consume the ultra-processed products. Results provide evidence that disfavors the use of TLL as a public policy tool, as only the red TLL affects intention to consume.

Key words: Emotion; Non-communicable diseases; Nutrition label

APRESENTAÇÃO ORAL – ORAL PRESENTATION

AREA: TEACHING

TE01.VIDEO LESSONS IN BACTERIOLOGY – LABORATORY PRACTICES

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Introduction: Education is dynamic and different kind of media has become an important part of higher education. The internet provided a variety of benefits in the learning process, including open access to educational contents, interaction and cooperative learning processes. Video lessons are considered major trends in education today, especially for microbiology topics, which involve abstract theories and hard-to-visualize phenomena. Laboratory practices are important to illuminate the abstract, but the new curricular guidelines from Ministry of Education reduces student time in classroom, as well as in laboratory. So, video lessons come as an attractive tool to engage students in microbiology learning. **Objective:** We intend to provide educational contents in bacteriology, expanding the institutional and public dissemination of knowledge about laboratory practices and theoretical contents related to this topic. **Methods:** We elaborated six video lessons with contents widely presented in bacteriology practical lessons. Materials, scripts and Power Point presentations were elaborated by professors and monitors. Initially, technical procedures were filmed at the teaching laboratory and, then the narrations were recorded in the studio with PROEX- UFF support. **Results:** Video lessons were produced on the subjects: Gram Stain Method, Ziehl-Neelsen Stain Method, Culture techniques in bacteriology and Antimicrobial Susceptibility Testing. They will be available on the Internet, in various communication channels for students, professionals, technicians and teachers who have an interest in these subjects. **Conclusion:** Internet available video lessons are easy-to-use tools that may increase student motivation, enhancing learning experience and providing technology as mediator of the interaction between learning subjects.

Key words: Video lessons; Teaching; Bacteriology

PÔSTER - POSTER

AREA: EXTENSION

EX01. NEUROSCIENCE BIOMEDICAL ACADEMIC LEAGUE - AN UNDERGRADUATE EXPERIENCE OF PROMOTING EVENTS AND KNOWLEDGE IN HEALTH EDUCATION

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Introduction: Academic Leagues are student associations that exert different activities, mostly linked to teaching and extension and generally present in medical graduation. The Neuroscience Biomedical Academic League – founded by Biomedical Science undergraduate students – was created as an alternative that works both in extension and teaching, but it is more focused in topics related to research in the field of Neuroscience than the purely clinical ones. **Objective:** The project aims to organize and promote events in and out of the university to popularize, teach and explain Neuroscience to other university students, high school students and the population in general. It also provides undergraduate students with information about the different neuroscience laboratories in the university. **Methods:** The project promotes different events throughout the year, with diverse topics in the field of Neuroscience, bringing researchers, graduate students and professors to talk about their work and bring Neuroscience to people in and out of the university. **Results:** The project has organized 22 events, attended by students from several courses and education levels. Most of the events have reached full seating capacity. **Conclusion:** There is still great demand for scientific events, especially focused on research. Students from different courses and educational levels seem interested in Neuroscience as a whole.

Key words: Academic league; Neuroscience; Extension

PÔSTER - POSTER

AREA: EXTENSION

EX02. EVALUATION OF THE CONSUMPTION OF ULTRA-PROCESSED FOODS OF CAREGIVERS AND THE ELDERLY ATTENDED AT THE HEALTH CENTER OF THE ELDERLY AND THEIR CAREGIVERS (CASIC)

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Introduction: The changes in eating habits have occurred due to the new human lifestyle and caused the substitution of in natura or minimally processed by ultra-processed food consumption. This substitution is harmful to health due to the low amount of micronutrients presented in ultra-processed foods, which are not enough for the body's functioning and the prevention of chronic non-communicable diseases (NCDs). **Objective:** To describe the consumption of ultra-processed foods in elderly and caregivers attending the CASIC (Center of Attention to the Health of the Elderly and Caregivers) in Niterói, and to correlate with aspects of nutritional status **Methods:** A questionnaire containing general data was applied to the elderly and caregivers. A 24h-meal and nutrition tracker were used for food intake evaluation. Ultra-processed foods were classified according to the New Classification, proposed by Monteiro et al (2016). The anthropometric evaluation consisted of measuring weight (kg), height (m), and waist circumference (cm). Body mass index (kg/m²) was calculated and classified according to Pan American Health Organization (2002). **Results:** The hypertension was more prevalent in both groups, being more prevalent in the elderly one. Macronutrients intake from both groups met. Regarding the ingestion of in natura or minimally processed foods and ultraprocessed products, no significant differences were haded between the them, except to the consumption of cooking ingredients and processed foods by elderly. **Conclusion:** Despite the high prevalence of hypertension in elderly and caregivers, the sodium consumption did not exceed daily recommendations.

Key words: Ultraprocessed foods; Elderly; Caregivers

PÔSTER - POSTER

AREA: EXTENSION

EX03. SUSTAINABLE ACTION NITEROI

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Introduction: Niteroi city is an environment with social inequalities, degradation, pollution, and other problems arising from poorly structured urban growth, generating intrinsic negative environmental and social impacts. The UN Summit on Sustainable Development set up a plan of action to reverse these deleterious effects on the community, which is comprised in the 17 Millennium Development Goals (MDG), in Agenda 2030. **Objective:** This project aims to unfold these 17 themes and make them palpable for students of the Federal Fluminense University (UFF) and the entire population of Niteroi. **Methods:** The project was divided into two lines of action - internal and external UFF communities - seeking to explore the individuality of each audience. We divided all 17 themes according to the main line of action into four distinct blocks. **Results:** A homepage was developed, as well as a logo and a page in social network Facebook. We organized three meetings: Block ENVIRONMENT - I Meeting of the ASN and a Sustainable Show, Block EDUCATION - I ASN Talk Wheel, and Blocks TECHNOLOGY and SOCIETY, with lectures and the 'Quiz Sustainability - Medicines and Responsible Consumption'. During the 14th National Science and Technology Week and the Project 'Science Under Tents', we presented the 'Sustainable Games', addressing mainly the Blocks Technology and Environment, but also dealing with thematic Education and Society. **Conclusion:** We started talking about 17's MDG in Niteroi City and we believe that this line of action is an efficient way to make the population aware of sustainable development.

Key words: Sustainability; Environmental education; 2030 Agenda

PÔSTER - POSTER

AREA: EXTENSION

EX05. KNOWING ABOUT LICE

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Introduction: Pediculosis is a parasitic infestation caused by *Pediculus capitis* on the scalp. It causes intense pruritus interfering in the daily activities of the host. With a higher prevalence in schoolchildren, it is associated with the behavior and represents a public health problem. **Objective:** The aim of this study was to disseminate information about pediculosis through a workshop for schoolchildren from 3rd to 5th years of elementary education from Niterói, Rio de Janeiro. **Methods:** The workshop lasts two hours and is made up of interactive activities, including macroscopic and microscopic observation of mounted slides lice, biscuit modeling, interactive games, music, assessment of infestation and workshop by participants and folders. The scheduling is carried out together with the Municipal Education Foundation of Niterói (FME) and transportation through the Transport Sector of UFF. **Results:** Two workshops were held in November 2017, one with a school from Engenhoca and another from Morro do Céu. They were attended by 46 students and six professionals. Among the students, 28 reported infestation and one reported pediculosis. In the evaluation of the event, 45 students and six professionals consider the workshop as excellent and a student as regular. During the activities, receptivity was observed by children and professionals. **Conclusion:** The workshop represented an interesting strategy according to the participants and encourages them to raise awareness about the theme, as well as the dissemination of this knowledge to the community where they are inserted.

Key words: Pediculosis; Children; Health education

PÔSTER - POSTER

AREA: EXTENSION

EX06. TEACHING OF BIOSECURITY IN BIOMEDICINE BRAZILIAN COURSES. A COMPARATIVE ANALYSIS

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Introduction: Biosecurity is the amount of actions that concern prevention, minimization or elimination of risks related to researching, production, teaching, technology development and service provision, aiming to health, environment preservation and quality results. Biomedicine has a whole range of actuation, comprising since microorganisms until biological fluids. With the objective to promote experiments of good quality and protection of workers, community and samples, it has been necessary to apply biosecurity principles. However, teaching biosecurity is not well conducted in college courses in Brazil, being preventive measures not applied to the learning processes. **Objective:** To verify how many biomedicine colleges offer biosecurity on the curricular degree and to compare private and public colleges according to E-mec. **Methods:** Researching has been made about Brazilian universities that offer biomedicine course, and how many of them promote the education of biosecurity, biosecurity obligation, type of institution and course load. Concurrently to data collection, Excel was used to produce comparative tables. **Results:** In total, 509 universities were listed by E-mec. However, only 285 were analyzed, being 260 private and 25 were public institutions. Some colleges were excluded because they were inactive or had many centres or the curricular degree was universal. **Conclusion:** Public colleges offer more education of biosecurity than private ones. On average, public universities have a course load higher (43,75h) when compared to private (35,71h). The private universities, when offer biosecurity, do it at the beginning of the course.

Key words: Biosecurity; Teaching; Biomedicine

PÔSTER - POSTER

AREA: OTHERS

OT01. ANALYSIS OF GENETIC ANCESTRY IN TWO POPULATION GROUPS FROM DIFFERENT BRAZILIAN REGIONS: IMPLICATED IN ASSOCIATION STUDIES WITH LEPROSY

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Introduction: Leprosy is a chronic infectious disease caused by *Mycobacterium leprae*, which has affinity to cutaneous macrophages and Schwann cells on peripheral nerves. Epidemiological evidences show that the host genes play a role in the disease outcome. Case-control genetic association studies in leprosy not always are replicated in populations with different genetic profiles and high miscegenation pattern, associated, in Brazil, to the inter-colonization. Recently, a susceptibility association of *PKLR* gene with leprosy in Rio de Janeiro's population was identified by the Leprosy Laboratory, which was not observed in Rondonópolis' population. That profile can direct to spurious associations. Therefore, it is necessary to use genomic ancestry to eliminate the effects of populational stratification. **Objective:** To infer the genetic ancestry composition of a population group of Rondonópolis, composed by leprosy patients and healthy individuals and compare to Rio de Janeiro's profile. **Methods:** The DNA genotyping of Rondonópolis' population was performed by a multiplex PCR, using a panel of 46 ancestry informative markers (AIMs), with GeneMapper 4.1 software, followed by ancestral composition inference by Structure v2.3.3. **Results:** Until now, the results of Rondonópolis ancestry contribution showed no expressive differences at ancestry between cases and controls, being restricted to a low percentage to each ancestry composition. However, there is a higher percentage of Europeans (71%) in controls and Africans (30%) in cases of Rio de Janeiro, demonstrating heterogeneity in the percentages of this population. **Conclusion:** Considering the genomic ancestry between Rondonópolis cases and controls, it was observed a greater homogeneity comparing to Rio de Janeiro's population.

Key words: Genetic ancestry; Association studies; Leprosy

PÔSTER - POSTER

AREA: OTHERS

OT02. EFFECTS OF DIFFERENT CONCENTRATIONS OF BRAZIL NUTS ON THE VASCULAR REACTIVITY IN HEALTHY RATS – A PILOT STUDY

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Introduction: Oilseeds are directly associated to a range of health benefits. Among those, the Brazil nuts have been highlighted, due its high concentration of unsaturated fats and selenium, an import antioxidant. However, its effects are not totally elucidated in the cardiovascular system of healthy individuals. **Objective:** To investigate the effects of different concentrations of Brazil nut on the vascular reactivity in health *Wistar* rats. **Methods:** Adult male *Wistar* rats (N=6/group) were allocated into three groups, control group (CG), Brazil nut10% and Brazil nut20%, and received the supplementation during 6 weeks. After, all animals were euthanized. Vascular reactivity was measure under acetylcholine and phenylephrine stimulus. Results were analyzed using one-way ANOVA test, followed by Newman-Keuls post-test. Statistical analyses were performed using the Graph Pad Prism 6.0 statistical package. All results were expressed as mean \pm SD (standard derivation) with significance level ($p < 0.05$). **Results:** There were no difference in weight gain ($p > 0.05$). In relation to retroperitoneal fat tissue, it was observed that Brazil nut10% (-49%) e Brazil nut20% (-71%) presented lower values than CG ($p = 0.013$). It was not observed any difference in left ventricle weight ($p = 0.11$). Vasodilator response to acetylcholine was higher on Brazil nut20% group in relation to other groups and there was no difference in response to phenylephrine stimulus ($p < 0.01$). **Conclusion:** The preliminary results showed that 20% of Brazil nut was able to improve endothelial vasodilation in healthy animals.

Key words: Brazil nut; Vascular reactivity; Adipose tissue

PÔSTER - POSTER

AREA: OTHERS

OT03. EFFECTS OF BRAZIL NUT ON BONE MASS – A PILOT STUDY

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Introduction: Unsaturated fatty acids act in bone parameters because promote osteoblasts increases. Besides that, the antioxidants decrease reactive oxygen species that may increase bone reabsorption. In this context, Brazil nut is an unsaturated fatty acid and the richest source food of selenium, a mineral antioxidant. Until now, no studies reported this relation. **Objective:** To evaluate the effects of Brazil nut on bone mass. **Methods:** Adult male *Wistar* rats (N=6/group) were allocated into three groups, control group (CG), Brazil nut10% and Brazil nut20%, and received the supplementation for 6 weeks. After, all animals were euthanized, and the length was measured. Femur and tibia were collected, cleaned and weighted. Statistical analyses were performed using the Graph Pad Prism 6.0. Length, femur and tibia mass were analyzed using one-way ANOVA test, post-test Newman-Keuls. All results were expressed as mean \pm SD (standard derivation) with significance level ($p < 0.05$). **Results:** There was no difference in relation to length ($p > 0.05$). In relation to femur and tibia mass (g), Brazil nut10% and Brazil nut20% were lower (0.7752 ± 0.092 ; 0.677 ± 0.063 , respectively) when compared to CG (0.9089 ± 0.0744) ($p = 0.002$). However, femur and tibia mass (g/100g) were higher in Brazil nut10% (0.2613 ± 0.2306) and Brazil nut 20% (0.2905 ± 0.3205) ($p = 0.0156$). **Conclusion:** The preliminary results showed that Brazil nut may to act on bone mass in healthy animals. Nevertheless, more studies will be necessary to analyses bone health.

Key words: Brazil nut; Bone mass; Health animals

PÔSTER - POSTER

AREA: OTHERS

OT04. DOES MEDITATION ALTER BRAIN RESPONSES TO NEGATIVE STIMULI? A SYSTEMATIC REVIEW

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Introduction: Despite several attempts to review and explain how meditation alters the brain and how it facilitates emotion regulation, the extent to which meditation and emotion regulation strategies share the same neural mechanisms remains unclear.

Objective: To assess the meditation influence in the neural processing of negative emotional stimuli when participants are instructed to regulate their emotional responses or simply reacted naturally to aversive stimuli. **Methods:** We selected studies where participants who underwent meditation interventions and long-term meditators were exposed to negative emotional stimuli while brain activity was measured. Searches were performed using PsycInfo, PubMed, Scopus, and Web of Science, which generated 882 papers, of which 11 were eligible for inclusion.

Results: There was a predominance of greater prefrontal/frontal activity for both participants who underwent meditation interventions and long-term meditators. Regarding emotion-related areas, participants who underwent meditation interventions showed greater activity in the insula. **Conclusion:** The present systematic review suggests that meditators recruited cognitive and attentional control resources, as seen by increased prefrontal/frontal activity, to deal with negative content. Besides that, there was an increased activity in the insula for participants who took part in meditation intervention, suggesting that the meditation practice helps foster interoceptive awareness of bodily and emotional states.

Key words: fMRI; Aversive stimuli; Mindfulness

PÔSTER - POSTER

AREA: OTHERS

OT06. EFFECTS OF BRAZIL NUT SUPPLEMENTATION ON BODY COMPOSITION AND OXIDATIVE STRESS - A PILOT STUDY

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Introduction: Brazil nut is the richest food source of selenium, a component of glutathione peroxidase antioxidant enzyme. Moreover, Brazil nut is a source of fibers, unsaturated fatty acids, and phenolic compounds. Its nutrition composition leads to antioxidant and anti-inflammatory properties by the Brazil nut. **Objective:** To evaluate the effects of Brazil nut supplementation on body composition and oxidative stress in male health *Wistar* rats. **Methods:** Animals were divided in three groups (n=6/group), control group (CG), Brazil nut group 10% (BNG10%) and Brazil nut group 20% (BNG20%). Brazil nut groups received the supplementation for six weeks. The body composition was obtained by DXA (dual-energy x-ray absorptiometry). The oxidative stress was measured by malondialdehyde (MDA), a lipid peroxidation marker, and analyzed by reaction with thiobarbituric acid (TBARS). Statistical analyses were performed using the Graph Pad Prism 6.0 statistical package. Results were analyzed using one-way ANOVA test, post-test Newman-Keuls. All results were expressed as mean \pm SD (standard derivation) with significance level ($p < 0.05$). **Results:** After six weeks, BNG20% and BNG10% decreased the adipose tissue percentage and fat mass compare to the CG, respectively, (CG: 20.1 \pm 0.91; BNG10%: 14.5 \pm 3.5; BNG20%: 11.1 \pm 4.6; $p=0.0076$), (CG: 71.7 \pm 12.3; BNG10%: 41 \pm 15.9; BNG20%: 25.5 \pm 12.4; $p=0.0007$). Concerning the lipid peroxidation, Brazil nut groups reduced the TBARS levels compare the CG (CG: 6.8 \pm 0.6; BNG10%: 2.9 \pm 0.5; BNG20%: 3.7 \pm 1.3 (nmol/ml); $p=0.0003$). **Conclusion:** According to preliminary results, Brazil nut supplementation is able to reduce the adipose tissue percentage, fat mass and oxidative stress in health *Wistar* rats.

Key words: Brazil nut; Oxidative stress; Body composition

PÔSTER - POSTER

AREA: OTHERS

OT07. UTILIZATION OF NEUROPROTECTORS CAN EXTEND SURVIVAL OF SPINAL CORD MOTONEURONS IN AMYOTROPHIC LATERAL SCLEROSIS (ALS) – A SYSTEMATIC REVIEW

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Introduction: ALS is a neurodegenerative disease of the motoneurons. It is suggested that the use of neuroprotectors in the containment of this process has a positive influence on the survival of the motoneurons, which may contribute to the prognosis of the patient. **Objective:** To review the current literature to identify the action of the neuroprotectors in glutamate excitotoxicity and the correlation with prognosis of the patient. **Methods:** A systematic review was performed according to the declaration of the PRISMA, based on articles searched in the PubMed, Lilacs, Scielo, Science Direct and Bireme databases. The search was limited to English language publications, having no filter from the initial date until April 2018. **Results:** The neuroprotectors (Ghrelin, Cape, Bay-11-7082, Anthocyanin, Receptor Antagonist [CNQX], GFAP-IkBaAA and GFAP-IkBaAA/SOD1G93A) presented a positive influence in reducing the concentration of glutamate, decreasing the level of oxidizing and proinflammatory agents. It was also found that the use of the Cape, Bay and Receptor Antagonist have 69%, 43%, 58% of neuroprotection, respectively. However, in the absence of neuroprotection, it was observed a decreased number in the motoneurons and in the percentage of survival of the same, an elevation of the extracellular levels of TNF and an increased activation of NF-KB. **Conclusion:** It is concluded that the use of the neuroprotectors in ALS can promote an extended survival of the motoneurons, making possible the decrease of the neurodegeneration. However, it is worth mentioning that these neuroprotectors act in different ways. Thus, it is unknown whether their combination could have repercussions on different results.

Key words: Amyotrophic lateral sclerosis; Neuroinflammation; Excitotoxicity

PÔSTER - POSTER

AREA: OTHERS

OT08. THE INVESTIGATION OF CHILDHOOD MALTREATMENT AND PSYCHOPATHOLOGY IN ADULTHOOD

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Introduction: During childhood, children can be exposed to different types of stressful experiences such as physical, emotional and sexual abuse, and/or physical and emotional neglect. These hazardous events can be critical to impair physical, emotional and psychological health. Indeed, scientific literature showed several evidences about the long-term effects of traumatic situations during childhood, including the development of Posttraumatic Stress Disorder (PTSD). **Objective:** The present study aims to investigate the impact of these different types of childhood maltreatment in the development of PTSD for an adulthood trauma. **Methods:** Five hundred college students of the Fluminense Federal University answered questionnaires investigating traumatic events in childhood (Childhood Trauma Questionnaire), adulthood (Trauma History Questionnaire) and PTSD symptoms (Posttraumatic Stress Disorder Checklist 5). Individual regressions between different types of child maltreatment and PTSD symptoms were performed. We also performed a regression analyses considering all types of maltreatment in the same model. **Results:** Our results indicated that, when analyzed individually, all types of childhood maltreatment were associated with higher PTSD symptoms to a traumatic event in adulthood ($p < 0,05$ for all individual Regressions). However, when a complete model was performed, physical abuse and emotional neglect did not present impact on the PTSD symptoms in our samples. **Conclusion:** These data suggest that the presence of traumatic events in childhood, especially emotional abuse, sexual abuse and physical neglect could represent vulnerability to the development of PTSD. These fragile life-term should be faced carefully mainly by those who are responsible for child care to prevent these events.

Key words: Childhood maltreatment; Adulthood trauma; Posttraumatic stress disorder

PÔSTER - POSTER

AREA: OTHERS

OT09. ANALYSIS OF HER2 EXPRESSION IN TUMORAL AND NON-TUMORAL CANINE MAMMARY GLAND

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Introduction: There is a high number of female dogs affected by breast cancer. HER-2 /neu oncogene has been studied globally within the context of mammary neoplasms, because of its important role in the carcinogenesis. **Objective:** To evaluate the Her-2 expression of canine mammary tumors. **Methods:** Blocks of canine mammary tissues samples belonging to the collection of the Veterinary Anatomic Pathology / UFF and Jorge Vaitsman Institute were selected. Histopathological evaluation was performed and the classification of 10 malignant tumors and 10 benign tumors were made according to the World Health Organization and the Brazilian Consensus of Canine Mammary Tumors. The immuno-histochemical technique was performed with Advance (DAKO) as recommended by the manufacturer, with Her-2 primary antibody (DAKO) 1:200. Samples were classified according to the HercepTest and ASCO / CAP interpretations. **Results:** Among all the benign samples analyzed by Herceptest, 70% presented positive rating and 30% negative rating, whereas in ASCO / CAP, 30% were classified as positive, 30% classified negative and 40% classified as inconclusive and all the malignant samples analyzed presented the same numbers for the ratings in both tests. **Conclusion:** The different interpretations between the tests caused the discrepancies between some results So, standardization is necessary for the veterinary routine. However, both have proved to be useful methods to aid the prognosis of canine breast cancer to the present moment.

Key words: Breast cancer; Female dog; HER2

PÔSTER - POSTER

AREA: OTHERS

OT10. TNF- α MODULATES IL-6 LEVELS IN RAT RETINAL CELL CULTURES

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Introduction: Cytokines are extracellular polypeptides, water-soluble, of low molecular weight, directly related to adaptive and innate immune responses. IL-6 is a cytokine involved in the modulation of several physiological events, as cell proliferation, differentiation, survival and apoptosis. Data from literature show that the release of IL-6 can be modulated by TNF- α . **Objective:** The aim of this work is to evaluate if levels of IL-6 could be modulated by TNF- α in mixed culture of retinal cells. **Methods:** The animal experiments were approved by the Animal Ethics Committee-UFF (project 00124/09). Rats from the Lister Hooded strain from P0 to P2 were euthanized. Their retinas were dissected in CMF, dissociated with trypsin and Pasteur pipette and seeded in Petri dishes previously treated with ornithine. Cultures were treated with TNF- α [0.5ng/mL] and maintained in 5% CO₂ atmosphere and 95% air at 37°C. Levels of IL-6 were determined by Western Blot. **Results:** Our results demonstrate that treatment with TNF- α [0.5ng/mL] decreases IL-6 levels in 15 and 45 minutes (10% and 20%) as well in 24h and 48h (20% and 50%). When applied at the 0.25ng/mL concentration of TNF- α , it was observed an increase of IL-6 levels at times of 15 (45%) and 45 (30%) minutes and 24 (75%) hours. **Conclusion:** These results suggest that TNF- α modulates IL-6 levels in a dose-dependent manner.

Key words: TNF- α modulation; IL-6 levels; retinal

PÔSTER - POSTER

AREA: OTHERS

OT11. IL-1B REGULATES IL-6 LEVELS IN RAT RETINAL CELLS MAINTAINED IN CULTURE

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Introduction: IL-1 β is a proinflammatory cytokine, synthesized mainly by monocytes and macrophages. It is one of the major initial marker of inflammatory response, being able to stimulate the IL-6 synthesis involved in processes of differentiation, proliferation, survival and apoptosis. Previous data from our group showed that IL-1 β (5ng/mL) or IL-6 (50ng/mL) treatment maintains the survival of retinal ganglion cells.

Objective: The purpose of our study is to evaluate if IL-6 levels can be modulated by IL-1 β in mixed retinal cell cultures. **Methods:** Neonatal rats were euthanized, and their retinas were dissected, treated with 0.1% trypsin and mechanically dissociated. Cells were plated and maintained in 199 medium with or without IL-1 β , in atmosphere of 5% CO₂ and 95% air at 37°C. IL-6 levels were determined by western blot analysis. Experimental animal procedures were approved by the Ethics Committee on Animal-UFF (project 00124/09). **Results:** Our results show that IL-1 β (5ng/mL) treatment decreases IL-6 levels in 15 and 45 min and in 24 and 48h (45%, 20%, 40% and 45% respectively). Treatment with IL-1 β (2,5ng/mL) increased levels of IL-6 in 15 and 45 min (75% and 40%, respectively). However, we observed a decrease in IL-6 levels (45%) in 24h. **Conclusion:** Our results indicate that the effect of IL-1 β on IL-6 levels is dose-dependent. Taken together, these results suggest a crosstalk between these interleukins in order to regulate retinal ganglion cell survival.

Key words: IL-1 β ; IL-6; modulation

PÔSTER - POSTER

AREA: OTHERS

OT12. NA⁺, K⁺ - ATPASE AS TARGET FOR NEW QUINAZOLINE DERIVATIVES IN ANTICANCER THERAPY

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Introduction: Na⁺, K⁺ -ATPase (NKA) is a transmembrane enzyme that participates in the maintenance of the electrochemical gradient, besides promoting intracellular signaling, which characterizes it as a target for anticancer therapy. Quinazolines are promising compounds in anticancer therapy and may influence NKA. **Objective:** To analyze the ability of new compounds derived from quinazoline to act as an antitumor on the human glioblastoma cell line and to evaluate the action of these compounds on the NKA enzyme. **Methods:** To determine the effect on cell viability, we used the MTT assay. For the determination of the effect of the compounds on the NKA activity, we used the protocol described by BURTH et al. (1997). To study the effects of the compounds on the cellular morphology, photographs were made in Leica Inverted Microscope. **Results:** At 24 hours exposure, compound GR-23 demonstrated a decrease in cell viability in a dose-dependent manner. Compound GR-28 followed the same trend. Tests were performed over 48h and 72 h, reaffirming the effects presented in the previous incubations. Regarding effects on cellular morphology, GR-21 and GR-28 were the compounds that led to a more evident change. **Conclusion:** Compounds GR-23 and GR-28 were the most effective analyzing all assays performed.

Key words: Na⁺, K⁺ -ATPase; Quinazoline; Glioblastoma.

PÔSTER - POSTER

AREA: OTHERS

OT13. EFFECTS OF BRAZIL NUT SUPPLEMENTATION ON BLOOD PRESSURE IN AN ORAL SODIUM OVERLOAD MODEL – A PILOT STUDY

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Introduction: Excessive sodium intake can lead to development of chronic non-communicable diseases (CNCD), like chronic kidney disease, cardiovascular disease and hypertension. CNCD is correlated with increased oxidative stress and inflammation environment through several mechanisms. In this context, Brazil nut has been related to avoid CNCD progression due its monounsaturated and polyunsaturated fatty acids, phenolics compounds and selenium, an antioxidant mineral. **Objective:** To evaluate the effects of Brazil nut supplementation on blood pressure of Wistar rats submitted an oral sodium overload. **Methods:** Male adults *Wistar* rats (N=32) were allocated in two groups: Control (C) and Sodium overload (Na; 1% in drinking water). After four weeks were measured the blood pressure and subdivided in four groups (N=8/group): Control group (CG), Brazil nuts 10% (BN10%; mixed in chow), Sodium overload (Na) and Sodium overload Brazil nuts 10% (NaBN10%). Systolic blood pressure (SBP) was measured in conscious rats by tail-cuff plethysmography (V1.10-Insight®) and glucose was measured using the test strips glucometer brand Accu-Chek Active (Roche®, Germany). Statistical analyses were performed using the Graph Pad Prism 6.0. **Results:** There were no significant difference in relation to blood pressure between groups (CG: 120.5±7.4; BN 10%: 117.1±6.1; Na: 129.1±12; NaBN 10%: 135.8±17.9 mmHg; $p=0.14$). In relation the glucose levels BN10% and NaBN 10% (85.4±6.4 vs 85.8±6.5 mg/dL) presented lower values compared to respectively control groups (CG: 98.3±3.1 vs and Na: 98±10.6 mg/dL) ($p<0.01$). **Conclusion:** According the preliminary results, the Brazil nut did not alter SBP. However, it was able to decrease glucose levels in rats subjected to an oral sodium overload.

Key words: Brazil nut; Cardiovascular disease; Blood pressure.

PÔSTER - POSTER

AREA: OTHERS

OT14. THERAPEUTIC AND TOXIC EFFECT OF NATURAL PRODUCTS WITH ANTI LEISHMANIA ACTIVITY IN MURINE MODEL

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Introduction: Leishmaniasis is an anthroponosis caused by protozoa of the genus *Leishmania* and transmitted by sandflies, being of global importance. In this regard, studies on the plant of the genus *Clusia* have shown potential as an alternative treatment. **Objective:** To analyze the anti-leishmania activity of the *Clusia* extract in a murine model of experimental infection by *Leishmania amazonensis*. **Methods:** The experiment was performed on murine model divided into two routes, topical and oral. By topical route: negative control (PBS + Lanette); positive control (Ketoconazole cream 2%); uninfected group and test group (*Clusia* extract 10% cream). Orally: positive control (Glucantime ©); negative control (PBS + Lanette); uninfected group and test group (*Clusia* extract 20mg / kg). The animals were weighed and the legs measured weekly. Popliteal lymph nodes, spleens, and blood samples were collected. **Results:** Two *in vivo* tests were performed; in the first, by topical route, there was a significant decrease of the lesions in the negative and experimental control groups on the 42nd day PI. Orally, the values were similar between the groups up to the 28th day PI; however, the parasite load of the experimental group was lower as the negative controls and treated with Glucantime®. In the second test, there was no development of lesions and negative parasitic load. **Conclusion:** The extract of *Clusia* sp. showed anti-leishmania activity and therapeutic effect in murine model, because it controlled the size of the lesions when administered by topical route and reduced the parasitic load in the lymph node when administered orally.

Key words: Immunobiology; *Leishmania amazonensis*; Natural extract.

PÔSTER - POSTER

AREA: OTHERS

OT16. COPING STYLES PREDICT POSTTRAUMATIC STRESS SYMPTOMS IN HEALTHY COLLEGE STUDENTS

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Introduction: When there is a problem in the recovery process from a trauma, a psychiatric disorder known as posttraumatic stress disorder can occur. A possible risk factor that would worsen or help the development of posttraumatic stress symptoms is the use of poorly and inadequate coping strategies facing a stressor. **Objective:** We investigated the influences of coping styles on posttraumatic stress symptoms among healthy college students exposed to trauma. **Methods:** The total sample was composed of 99 Brazilian college students, but only 37 fulfilled A1 criteria from the DSM-IV for PTSD diagnostic. The following scales were used: i) Posttraumatic Stress Disorder Checklist – Civilian Version (PCL-C) and ii) Brief COPE. **Results:** Emotion-focused coping predicted less posttraumatic stress symptoms while dysfunctional coping strategies were a positive predictor of posttraumatic stress symptoms. **Conclusion:** Our findings suggest that different strategies of coping may influence posttraumatic stress symptoms. Specifically, dysfunctional coping styles are strongly associated with posttraumatic stress symptoms severity while emotion-focused coping styles, consisting of adaptive strategies, are related to reduced posttraumatic stress symptoms.

Key words: Posttraumatic Stress Symptoms; Coping; Trauma.

PÔSTER - POSTER

AREA: OTHERS

OT17. THE VULNERABILITY OF THE BRAZILIAN SOCIETY BEFORE THE USE OF PHOSPHOETHANOLAMINE IN VIEW OF THE PRINCIPALIST THEORY

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Introduction: Social vulnerability is related to fragility, disadvantage, among other forms of social exclusion. The dissemination of information in Brazil about curing cancer with the use of phosphoethanolamine contributed to sick individuals seek for their treatment. Clinical trials in humans began to be performed to test its effectiveness and possible toxicity. **Objective:** To analyze, in the conception of social vulnerability, the use of phosphoethanolamine as a therapeutic approach for the treatment of cancer in Brazil. **Methods:** A systematic literature search with the data was performed on secondary sources (PubMed, Portal.Periodicos.Capes, SciELO), between March 2016 and March 2017. Original articles, theses, literature reviews, systematic reviews, clinical trials and in vitro and in vivo experimental studies were included for detailed analysis. **Results:** The synthetic phosphoethanolamine, known as “cancer pill”, was used in previous studies in experimental models. These studies found evidence that this substance could inhibit the growth and / or tumor proliferation. Due to advanced disease and the dissemination in the media, cancer patients and their relatives opted for treatment with phosphoethanolamine. The first results of the clinical tests performed in humans showed no favorable effects on the use of this substance at the study dose. As a result, the responsible organs of Brazil suspended temporarily its commercialization as a medicine or food supplement. **Conclusion:** Tests performed in humans with phosphoethanolamine showed no expected result. It is necessary that these clinical trials are completed, ensuring greater security and protection to the populations involved.

Key words: Social vulnerability; Phosphoethanolamine; Cancer.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP01. INVESTIGATION OF *TRICHOMONAS VAGINALIS* IN PATIENTS ATTENDED AT SEXUALLY TRANSMITTED DISEASES SECTOR OF FLUMINENSE FEDERAL UNIVERSITY, NITERÓI, RJ

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Introduction: Trichomoniasis is a sexually transmitted infection (STI) caused by *Trichomonas vaginalis*, a flagellated protozoan, which inhabits human urogenital tract. In women, it can determine vaginal discharge with intense odor, pregnancy complications, preterm birth and promote infection by human immunodeficiency virus (HIV). Men are usually asymptomatic and considered as carriers, however symptoms as urethritis can be observed. Therefore, it is important to perform diagnosis in individuals with active sexual life and amplify the knowledge about this infection.

Objective: The aim of this study was to identify *Trichomonas vaginalis* frequency in patients with active sexual life, attended at Sexually Transmitted Diseases Sector (STD Sector) of Fluminense Federal University (UFF) during the period from February to May 2017 and from December 2017 to March 2018. **Methods:** From feminine patient two swabs of posterior fornix were collected: one for wet mount examination and stained Giemsa smear and the other for culture media (TYI-S-33) inoculation. For men, urine collection was performed, being examined by wet mount, stained Giemsa smear and culture media inoculation. Data on demographics, sexual and reproductive history were collected. **Results:** Overall adherence to the study was of 49 patients, 14 females and 35 males. From these, 19 male patients delivered samples and 11 female patients could perform swab collection. All patients presented negative results in all the techniques performed. **Conclusion:** We did not detect *Trichomonas vaginalis* in the samples of patients of the STD Sector who adhered to the study by techniques of direct examination, distension stained by Giemsa and culture.

Key words: Trichomoniasis; Diagnosis; STI.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP02. MOLECULAR DETECTION AND CHARACTERIZATION OF PARVOVIRUS FROM DOMESTIC CATS IN RIO DE JANEIRO (2008-2017)

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Introduction: Feline parvovirus (FPV) and canine parvovirus (CPV) are over 98% identical in their DNA sequences and CPV is clearly a host range variant of FPV. The new variants of CPV (2a/2b/2c) have gained the ability to infect cats. **Objective:** The aim of this study was to perform the molecular detection and characterization of parvovirus strains circulating in domestic cats. **Methods:** Seventy-five fecal samples, collected from cats \leq 1 year old with diarrhea, were screened for the presence of parvovirus by PCR. The positive samples were subjected to sequence and phylogenetic analysis of the entire VP2 capsid gene (1755bp). **Results:** Considering all the nucleotide changes encountered in the VP2 sequences, 32 were synonymous and 16 were non-synonymous substitutions. Analysis of the deduced amino acid (aa) residues at critical positions that determine feline/canine host range allowed the identification of the parvoviruses: eight sequences were FPV, while 16 were CPV (seven CPV-2a and nine CPV-2b). A single sequence (RJ1085/11) with aa changes characteristic of CPV at positions 80, 93, 103, 300 and 323 could not be classified. Non-synonymous substitutions were found at residues 297 (Ser→Asn e Ser→Ala) and 324 (Tyr→Leu), the latter had not been found in cats yet and these sites presented with positive selection. **Conclusion:** This is the first report of CPV-2a/2b in domestic cats in Brazil and raises the question if cats may act as a reservoir or could potentially be a risk factor for infecting other dogs and cats with parvoviruses.

Key words: Feline parvovirus; Canine parvovirus; Domestic cats.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP03. CHRONIC EXPERIMENTAL GENITAL LEPTOSPIROSIS WITH AUTOCHTHONOUS *Leptospira santarosai* STRAINS OF SEROGROUP SEJROE

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Introduction: Leptospirosis in livestock presents as a chronic infection that leads to reproductive problems. However, few studies succeeded on reproducing the chronic genital infection it on experimental conditions. **Objective:** To assess the chronic experimental genital leptospirosis with autochthonous *Leptospira santarosai* strains of serogroup Sejroe. **Methods:** Six Santa Inês lamb ewes were inoculated with 1×10^8 leptospire, with three different strains of the serogroup Sejroe (FV237, FV52 and U81). Blood, urine, vaginal fluid, uterus fragment, uterine fluid and follicular aspirate samples were collected. Study was conducted during 90 days at the *Unidade de Pesquisa Experimental de Caprinos e Ovinos* (UniPECO-UFF). **Results:** All animals seroconverted. All but one (U81 group) were positive on urinary PCR. Regarding the results of the vaginal fluid, four of the six animals presented positivity at least once. Only one ewe (FV237 Group) was positive in PCR from uterine lavage. All animals were negative in PCR from follicular aspirate. Regarding to the uterus fragment samples, FV273 Group showed more positive results in PCR in comparison to other groups. **Conclusion:** Infection was confirmed in all groups by PCR. The most important outcome was the presence of strains of serogroup Sejroe in genital tract, indicating a chronic infection in this site. It is important to better understand the pathophysiology of the genital leptospiral infection on ruminants and consequent reproductive disease.

Key words: Uterus; MAT; Ruminants.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP04. ADHERENCE OF POTENTIALLY ZONOTIC ATYPICAL ENTEROPATHOGENIC *Escherichia coli* (aEPEC) STRAINS ISOLATED FROM ANIMALS

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Introduction: Atypical EPEC (aEPEC) strains cause human diarrhea and colonize several animal species. Therefore, many studies seek to clarify its virulent potential to humans and other animals. Our research group has isolated aEPEC from animals belonging to serotypes frequently detected from human sources. Here, we demonstrate the interaction potential of aEPEC strains, from canine and cattle origins, belonging to our bacterial collection. **Objective:** To evaluate the interaction of aEPEC strains to biotic and abiotic surfaces and the presence of genetic markers involved with such processes. **Methods:** Thirteen aEPEC strains isolated from dogs (n = 4) and cattle (n = 9) belonging to seven serotypes, including O26:H11, were investigated through PCR for genetic markers associated with adherence. Phenotypic tests were included: detection of type 1 fimbriae, curli fibers, and cellulose production; adherence on glass and quantitative analysis of biofilm formation on polystyrene; adherence (1, 6, 12 and 18 days) on polystyrene and pre-fixed HEp-2 cells. **Results:** The *ecpA*, *fimH* and *agn43* were the most prevalent genes. Type 1 fimbriae, cellulose and curli production were detected in 61.5%, 61.5% and 92,3% of the strains, respectively. Glass adherence occurred in 85% of strains. Biofilm production was detected in 77% of isolates with higher prevalence among canine samples. Higher CFU/mL counts were detected on the biotic surfaces, which increased over time. **Conclusion:** The results indicate the adhesion potential and biofilm formation of these strains which may contribute to their maintenance on reservoirs, hosts and the environment.

Key words: *Escherichia coli*; Atypical EPEC; Virulence.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP05. PREVALENCE AND RISK FACTORS OF EQUINE PEGIVIRUS (EPgV) AND THEILER'S DISEASE ASSOCIATED VIRUS (TDAV) INFECTIONS IN RIO DE JANEIRO STATE

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Introduction: The equine pegivirus (EPgV), the Theiler's Disease Associated Virus (TDAV) and the equine hepacivirus (EHCV) are members of the Flaviviridae family. They are hepatotropic viruses genetically related to the hepatitis C virus and the human pegivirus. **Objective:** To investigate the presence and risk factors associated with EPgV and TDAV infections in Rio de Janeiro state, as well as to access the EHCV coinfection occurrence. **Methods:** EPgV and TDAV were detected by SYBR Green intercalating dye-based PCR directed to a conserved region of the 5' non-coding of both viruses, differentiated by sequencing reactions. The EHCV was detected by conventional Nested-PCR directed to the NS5B region. **Results:** Three hundred serum samples were analyzed, revealing a global prevalence of 19.6%. Fifty-four (18%) of 300 samples were EPgV-positive, three (1%) samples were TDAV-positive and two samples were undetermined. Ten (17%) of 59 positive animals were EHCV coinfecting. The majority of positive animals were female Campolina breed horses from Metropolitan mesoregion raised for sport activity in the extensive system. Nucleotide distance among EPgV, TDAV and the isolates available in GenBank was 43.4%. **Conclusion:** These preliminary data reveal that the primers directed to EPgV and TDAV was efficient to detect both viruses. The EPgV infection was present in every mesoregion investigated with a high prevalence. Additionally, this is the first report of a TDAV infection in Brazil and second in the world.

Key words: Horse; Equine Pegivirus; Theiler's disease associated virus.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP06. ENTEROCOCCI ON INTESTINAL MICROBIOTA BEFORE AND AFTER DIET WITH 70% COCOA

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Introduction: *Enterococcus* spp. are ubiquitous, present in environment, foods and animal microbiota. Regarding the species associated with human's intestinal microbiota, the inclusion of functional foods in the diet may increase the number of beneficial intestinal bacteria, the so-called probiotics. Flavonoids found in cocoa improve cardiovascular health by increasing the activity of the nitric oxide synthase and, therefore, cocoa is considered a functional food **Objective:** We quantitatively evaluated the presence of enterococci in the intestinal microbiota of patients with heart disease, before and after intervention with a bitter chocolate-rich diet. **Methods:** *Enterococcus* spp. was isolated from patients' feces, before and after intervention with a chocolate-rich diet containing 70% cocoa by serial dilutions on Bile Esculin Azide Agar (Scharlau). CFU counting was performed through positive reaction, showed by dark brown or black complex. Pure cultures were obtained and isolates were subjected to multiplex-PCR for species identification. **Results:** Among the 12 patients, three (25%) showed an increased count of enterococci, while four (33.3%) decreased. Five (41.7%) patients did not present significant alterations. A total of 180 strains was isolated and 148 (82.2%) isolates were identified as *Enterococcus* sp. Of these, 21 (14.2%) and 68 (45.9%) isolates were identified as *E. faecalis* and *E. faecium*, respectively. **Conclusion:** Our results suggest that there is no effect on enterococcal count in patients' microbiota. More data are necessary to evaluate the role of bitter chocolate-rich diet containing 70% cocoa as a functional food, specifically acting as a prebiotic for enterococci.

Key words: *Enterococcus*; Cocoa; Feces.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP07. ANTIMICROBIAL SUSCEPTIBILITY PROFILES OF *Enterococcus faecalis* AND *Enterococcus faecium* ISOLATES RECOVERED FROM SWINES IN RIO DE JANEIRO

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Introduction: *Enterococcus* are members of the intestinal microbiota of humans and other animals. However, some species, such as *Enterococcus faecalis* and *Enterococcus faecium*, may cause diseases, mainly in immunocompromised patients. Antimicrobial resistant isolates are commonly responsible for human infections. In recent years, studies have investigated the role of animals as reservoirs of multidrug-resistant bacteria. Scarce data are available in our country. **Objective:** To investigate the occurrence of swines colonized with multidrug-resistant *E. faecalis* and *E. faecium* in farms located in Rio de Janeiro state. **Methods:** Rectal swabs were sampled from 61 swines, distributed in five farms, from 2014 to 2016. Bacterial isolation was made in Enterococcosel broth, without and with vancomycin, and trypticase soy agar, being selected until six colonies from each animal. Species identification was made by MALDI-TOF and evaluation of the antimicrobial susceptibility to nine drugs by the disk-diffusion method. **Results:** We isolated *E. faecium* (27), *E. casseliflavus* (15), *E. gallinarum* (12), *E. hirae* (12), *E. faecalis* (7), *E. avium* (1), and *E. mundtii* (1). Most of the *E. faecium* isolates (16) were susceptible to all antimicrobial agents tested. Resistance was observed only to tetracycline (5) and ciprofloxacin (2). *E. faecalis* isolates were resistant to tetracycline (5), high-level streptomycin (4), high-level gentamicin (2), and norfloxacin (1). Only multidrug-resistant *E. faecalis* isolates were detected in the gut microbiota of swines. **Conclusion:** Detection of multidrug-resistant enterococci in swines alerts to the potential of food-producing animals in the transmission of these bacteria to human. **Key words:** Swines; Multidrug-resistant; *Enterococcus* sp.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP08. COMPARISON BETWEEN THE MINIMUM CONCENTRATION OF VANCOMYCIN IN SOLUTION AND VANCOMYCIN NANO EMULSIFIED NEEDED TO INHIBIT BACTERIAL GROWTH

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Introduction: Vancomycin is indicated for the treatment of serious infections caused by strains of *Staphylococcus aureus* resistant to methicillin, but susceptible to vancomycin. It is also indicated to treat infections caused by other microorganisms susceptible to vancomycin. Nano particles improve antibiotic effect because of their surface area increase. **Objective:** To compare the performance of vancomycin with vancomycin Nano emulsion against planktonic *Staphylococcus aureus*, *Staphylococcus epidermidis* and *Escherichia coli* strains. **Methods:** To obtain the Nano emulsions, we homogenized by agitation (400 RPM) for 30 min at room temperature the oily phase, the surfactant agents and vancomycin (5%). After that, the aqueous phase was added to the oily phase under the same continuous agitation during 1 hour. We determined the minimum inhibitory concentration (MIC) by the microdilution method according to the Clinical and Laboratory Standards Institute (CLSI 2009). **Results:** The performance of the vancomycin Nano emulsion generated identical results for inhibition of *S. aureus* growth, compared to vancomycin (1 µg/mL). The results were promising when compared to *S. epidermidis* (4 µg/mL for vancomycin and 1µg/ml for vancomycin Nano emulsion) and surprisingly 2 µg/ml of vancomycin inhibited the growth of *E. coli* while only 0,5 µg/mL of vancomycin Nano emulsion presented the same result. **Conclusion:** Our results suggest that the increased surface contact of the antimicrobial agent can generate an increment of the effect and the decrease of the dose needed. In this way, it can also prevent the emergence of bacterial resistance to antimicrobial agents.

Key words: Nano Emulsion, Vancomycin, MIC.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP09. GASTROINTESTINAL HELMINTHS AND PROTOZOA STRUCTURES IN FECES OF CARNIVORE AND ARTIODACTYLS MAMMALS OF ITATIAIA NATIONAL PARK, BRAZIL

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Introduction: Mammalian feces can provide information about animal taxonomy and gastrointestinal parasites dynamics. **Objective:** To research the mammalian species of Carnivora and Artiodactyla orders that circulate in Itatiaia National Park (PNI) as well as gastrointestinal parasites evolutionary forms in its biological samples. **Methods:** This study was approved by CEUA/UFF 930 and SISBIO 57635-1. From June 2017 to April 2018, carnivorous and artiodactyls' compatible fecal samples were collected and georeferenced in PNI trails. Feces were subjected to macroscopic morphological analysis, guard hairs trichology, microscopic coproparasitological techniques, and immunoenzymatic assay for detection of *Cryptosporidium* sp. antigens. **Results:** Of 244 fecal samples, macroscopic analysis allowed differentiation of feces up to the order level Carnivora (29.9%) and Artiodactyla (12.7%); and family level Canidae (7.4%), Felidae (50%). Guard hairs trichological analysis was performed in 92.6% samples, being evidenced carnivores' (46.5%) and artiodactyls' (10.6%) guard hairs. Then, all samples were classified based on association of macroscopic and trichological analysis. Gastrointestinal parasites were detected in 69.3% of the samples, being diagnosed helminths (61.5%) and protozoa (8.6%). The gastrointestinal parasites structures more detected were eggs of family Ascarididae (29.9%), Diphyllbothriidae (21,3%) and genus *Trichuris* (13,5%). In the immunoenzymatic assay, antigens of *Cryptosporidium* sp. were detected in 27.5%, specially the artiodactyls samples (80.6%). **Conclusion:** It was possible to macroscopically differentiate feces up to order and family levels. More than half of the samples had carnivores and artiodactyls' guard hairs. Helminths were more frequent

than protozoa. Antigens of *Cryptosporidium* sp. were more detected in artiodactyls feces than in carnivores.

Key words: Wild mammals; Free-living; Gastrointestinal parasites.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP10. VIRULENCE MARKERS IN *Escherichia coli* STRAINS ISOLATED FROM POULTRY, POULTRY MEAT AND SOIL

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Introduction: *Escherichia coli* are well-known as intestinal commensal bacteria, but some strains are capable to cause intestinal or extra-intestinal (ExPEC) infections. In animals, especially the poultries can be sources of these strains. These strains' high resistance prevalence give us support to amplify the knowledge about it. **Objective:** To search for genetic markers associated with extra-intestinal virulence in *E. coli* strains isolated from poultry feces (P), raw poultry meat (PM) and soil from poultry breeding sites (S) samples. **Methods:** An amount of 262 strains isolated from P (n=148), PM (n=101), and S (n=13) were subjected to PCR for five genes related to ExPEC virulence factors: *pap*, *kps*, *hlyA*, *cnf-1*, and *irp2* (Group I). Positive strains to at least one gene were also tested to *fimH*, *ecpA*, *csgBA* and *iss* (Group II). **Results:** Fifty-seven (21.8%) strains from P (n=23, 15.5%) and PM (n=34, 33.7%) were selected with Group I genes screening (no S strain was positive), and after Group II PCR assays frequencies from 26.1% (*iss*– poultry) to 97% (*csg*– meat poultry) were observed. *cnf-1* and *hlyA* genes were not detected. Nineteen virulence profiles were observed among P and PM strains (with four shared profiles). The frequency of virulence genes, either by comparing the presence of at least one gene or five or more genes, was significantly higher in PM strains. **Conclusion:** The high prevalence of virulence genes, mainly from PM strains, reinforces the role of P and PM as reservoirs and vehicles of potentially ExPEC strains to human.

Key words: *Escherichia coli*; Extra-intestinal disease; Poultry.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP12. ANTIMICROBIAL RESISTANCE PROFILES OF BETA-HAEMOLYTIC STREPTOCOCCI RECOVERED FROM OROPHARYNX

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Introduction: *Streptococcus pyogenes* (group A streptococci) is the main etiological agent of bacterial pharyngitis. *Streptococcus dysgalactiae* subsp *equisimilis* (SDSE – groups C and G) has been associated with this infection. Both species remain susceptible to penicillin. Macrolides and lincosamides are therapeutic alternatives. However, increased resistance to these antimicrobial agents have been reported in several regions. **Objective:** To evaluate the occurrence of beta-haemolytic streptococci carriage in 121 children and 127 young adults, symptomatic or not, and antimicrobial susceptibility of bacterial isolates. **Methods:** Oropharynx secretions were cultured in blood agar medium. Isolates were identified by phenotypic and serological tests. Antimicrobial susceptibility was performed by agar diffusion technique. Erythromycin resistant isolates were subjected to investigation of resistance phenotype and genotype and minimum inhibitory concentration (MIC). **Results:** In children, 17 (14%) isolates identified as GAS were recovered. Seventeen (13.4%) isolates from young adults were identified as GAS (3), *Streptococcus agalactiae* (GBS, 4) and SDSE (10). All 34 isolates were susceptible to ceftriaxone, levofloxacin, penicillin and vancomycin. Non-susceptibility to clindamycin and tetracycline was observed in 2.9% and 14.7% of the isolates, respectively. Non-susceptibility to erythromycin was found in three young adults (8.8%). The macrolide resistance phenotypes and genotypes were *M/mefA/E* (2 isolates) and *iMLS_B/ermA* (1). The erythromycin MIC ranged from 8 to 16 µg/ml. **Conclusion:** Young adults were colonized for longer period than children and macrolide-resistant isolates were recovered among these subjects.

Key words: Beta-haemolytic streptococci; Oropharynx; Antimicrobial susceptibility.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP13. LABORATORY DIAGNOSIS OF *Blastocystis* sp.: A SYSTEMATIC REVIEW

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Introduction: *Blastocystis* sp. is a highly prevalent and potential pathogenic protozoan associated with gastrointestinal symptoms. There are several techniques used for its diagnosis and the use of non-specific tests can underestimate the infection. **Objective:** To carry out a systematic review, from 2007 to 2017, searching for the most used techniques for *Blastocystis* sp. diagnosis. **Methods:** A systematic review by combining the descriptors "diagnosis", "techniques", "blastocystis", "blastocystosis" in PubMed, SciELO and Bireme databases was done. The initial selection of the articles occurred by reading the abstracts. Inclusion and exclusion criteria were established and applied. The articles recovered in their entirety were read and analyzed, being finally considered only those that contemplated the objective of the systematic review. **Results:** By the use of descriptors, 289 articles were found, of which 45 articles from SciELO, 93 from PubMed and 48 from Bireme were included after reading the abstracts. From this group, after applying exclusion criteria, 36 articles were considered for review. Among them, the most common techniques used in the diagnosis of *Blastocystis* sp. were direct microscopic examination (50%) and polymerase chain reaction (PCR; 50%), followed by the formaldehyde/ethyl acetate concentration technique (41.7%) and culture (36.1%). As gold-standard technique, some authors proposed the association between microscopic parasitological techniques and PCR, culture and PCR. **Conclusion:** The systematic review showed several advantages and disadvantages between the techniques used for *Blastocystis* sp. diagnosis, such as less cost for microscopic parasitological techniques and higher sensibility for PCR without consensus.

Key words: Techniques; Protozoan; Intestinal parasite.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP14. GASTROINTESTINAL PARASITES IN MAMMALS OF THE RIO DE JANEIRO ZOOLOGICAL GARDEN

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Introduction: Gastrointestinal parasites may determine diarrhea, dysentery or even death in captive mammals. These animals tend to be more susceptible to parasitic infections due to confinement. **Objective:** To investigate gastrointestinal parasites of the several species of captive mammals of the Rio de Janeiro Zoo. **Methods:** The gastrointestinal parasites of the several species of captive mammals of the Rio de Janeiro Zoo were investigated between 2016 and 2017. **Results:** The positivity for the parasitic evolutionary forms was 70.1%. Among these, by the microscopic techniques in the artiodactyls, the frequency of eggs similar to Trichostrongyloidea and Strongyloidea Orders was 16.6% and similar to *Entamoeba* sp. cysts was 32%. Eggs of helminths were found in carnivorous feces, such as hookworm and the cestode of the Diphylobothriidae Family in *Leopardus pardalis* (4.3%) and *Toxascaris leonina* in *Panthera leo* (4.3%). In primates' feces, the frequencies of nematode larvae were 25.3%, eggs of Trichostrongyloidea and Strongyloidea Orders 20.6% and eggs of *Trichuris trichiura* 17.4%. Intestinal protozoa as *Balantioides coli* (9.5%), *Entamoeba* sp. (16.1%) and *Cryptosporidium* sp. (6.3%) were also diagnosed in primate samples. By antigen tests, the complex *Entamoeba histolytica/E. dispar* (36,6%) was the most evidenced, followed by *Cryptosporidium* sp. (7.9%) and *Giardia duodenalis* (1.2%). **Conclusion:** It is suggested that the frequency of parasites may be associated with the species of the animal, the sanitary management, food and/or contaminated water.

Key words: Wild animals; Helminths; Protozoa.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP15. CHARACTERIZATION OF BIOFILM-FORMING ABILITY OF

Staphylococcus pseudintermedius SAMPLES ISOLATED FROM DOGS

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Introduction: *Staphylococcus pseudintermedius* is a bacterial species, part of the normal microbiota of dogs. They may also act as a pathogenic species causing infections like otitis and pyoderma. One of the virulence factors of this genus is the biofilm forming ability, related to infections that are difficult to treat. *Staphylococcus* species are known to be strong biofilm producers. The biofilm-forming ability is related to a polysaccharide called “Polysaccharide Intercellular Adesin” – PIA, encoded by the operon *ica*. However, little is known about the capacity to form biofilm of *Staphylococcus pseudintermedius*. **Objective:** To evaluate the biofilm-forming ability of *S. pseudintermedius* isolated from dogs and to investigate the presence of *icaA* gene in these samples. **Methods:** Samples were collected from infected dogs (pyoderma and otitis) and colonized dogs (nostrils and perineum). Staphylococcal isolates were identified by mass spectrometry (MALDI-TOF MS) and multiplex-PCR targeting the thermonuclease gene *nuc*. Biofilm formation was evaluated by a quantitative microtiter plate assay. The presence of *icaA* was investigated by PCR. **Results:** All samples were capable to produce biofilm at some level. Seventy-one (84,5%) of 84 isolates were classified as strong biofilm producers; ten (11.9%) isolates were moderate biofilm producers; and three (3.5%) isolates were weak biofilm producers. The *icaA* gene was found in 88% of the *S. pseudintermedius* samples. *icaA*-negative isolates made up 12%. There was no correlation between presence of *icaA* and being classified as a strong biofilm producer. **Conclusion:** Like other staphylococcal species, *S. pseudintermedius* has a high capacity to form biofilm and it appears to be *ica*-dependent.

Key words: *Staphylococcus* spp.; Biofilm; Dogs.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP16. CHARACTERIZATION OF BIOFILM-FORMING ABILITY OF *Staphylococcus schleiferi* SAMPLES ISOLATED FROM DOGS

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Introduction: *Staphylococcus schleiferi* is a variable coagulase species that contains two subspecies, *S. schleiferi* subsp. *coagulans* (positive result for the tube coagulase test), and *S. schleiferi* subsp. *schleiferi* (negative result). This species is associated with topic infections in dogs, especially otitis, and is not frequently isolated from colonized dogs, without any clinical manifestations. Despite being a bacterial species associated with the canine host, it has already been isolated causing infections in humans, which evidences its zoonotic potential. This situation seems to be more common in immunocompromised individuals. As other species of the genus, the biofilm formation may also constitute an important virulence factor of *S. schleiferi*. However, little is known about its biofilm-forming ability, due to the lack of studies that deal with this subject. **Objective:** To evaluate the biofilm-forming ability of *S. schleiferi* isolated from dogs affected with topic infections and colonized dogs. **Methods:** Samples were collected from infected dogs (pyoderma and otitis) and colonized dogs (nostrils and perineum). Staphylococcal isolates were identified by mass spectrometry (MALDI-TOF MS). Biofilm formation was evaluated by a quantitative microtiter plate assay. **Results:** Forty-one *S. schleiferi* isolates were obtained. Thirty-one (75.6%) isolates were classified as strong biofilm producers, four (9.7%) isolates were moderate biofilm producers, and four (9.7%) as weak biofilm producers. Two (5%) isolates were not able to produce biofilm. **Conclusion:** Like other staphylococcal species, *S. schleiferi* has a high capacity to form biofilm. The biofilm-forming ability is a worrying problem. More attention should be paid to this subject.

Key words: *Staphylococcus* spp.; Biofilm; Dogs.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP17. PNEUMOCOCCAL COLONIZATION AMONG ADULTS LIVING IN AN URBAN SLUM IN BRAZIL: A CULTURE- AND PCR-BASED SURVEY

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Introduction: Young children are considered the main reservoirs for pneumococci and target of pneumococcal diseases. However, they affect individuals from all age groups, representing a major economic burden among vaccine-preventable diseases in adults. **Objective:** To determine the pneumococcal carriage prevalence among adults living in a slum and to compare different methodologies for pneumococcal detection. **Methods:** From Oct-Nov 2016, we collected oropharyngeal swabs from 385 adults ≥ 18 years old attending one public clinic inside a urban slum in Niterói/RJ. After a broth enrichment (BE) step, we performed three different approaches to detect pneumococci: culture on blood agar plate (BEC), culture on selective medium (BESC), and *lytA*-PCR (BE-*lytA*). We determined the antimicrobial susceptibility profiles and the capsular types of the isolates. **Results:** We detected 100 (26.2%) pneumococcal carriers. The culture-based methods enabled the detection of pneumococci in 32 (8.3%) adults and three of them were co-colonized with two distinct isolates. The BEC, BESC and BE-*lytA* methods allowed the detection of 19 (4.9%), 24 (6.2%) and 88 (22.9%) carriers, respectively. Smoking was the single characteristic associated with pneumococcal carriage. We detected 14 capsular types among 24 (68.6%) of the 35 isolates. The prevalent serotypes were 9N/9L, 10A, 15B/15C, and 35F/47F (n=3; 8.6% each). Penicillin non-susceptible pneumococci and erythromycin-resistant isolates made up 22.8% (n=8; MIC of 0.38-1.5 μ g/ml) and 5.7% (n=2; MIC > 256 μ g/ml), respectively. **Conclusion:** Adults may constitute important reservoirs for pneumococci, since we observed a high colonization prevalence. The PCR-based method was more sensitive, but the specificity may be questionable.

Key words: Adults; Pneumococcal colonization; Culture and PCR.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP18. EPIDEMIOLOGICAL STUDY ON HUMAN PAPILLOMAVIRUS IN ORAL INFECTION AND IMPACT OF VACCINATION FOR MALE STUDENTS OF UNIVERSIDADE FEDERAL FLUMINENSE-RJ

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Introduction: Oral HPV infections are significantly more common in men, according to a CDC (Centers for Disease Control and Prevention) study, since men have practically three times more oral infections (10%) than women (3.6%). Likewise, frequencies of oropharyngeal cancer in men are four times higher than in women. Currently, these clinical manifestations caused by HPV can be considered immunopreventable diseases through vaccines. **Objective:** To study the main types of circulating HPV in the oral mucosa of a male population of university students with age ranging from 18 to 20 years, from 2016 to 2020 vaccinated in the sexually transmitted diseases (STD) sector of the *Universidade Federal Fluminense*. **Methods:** (i) to detect HPV DNA by PCR using the MY09 / MY11 and Nested-PCR primers with GP5 + / 6 + primers; (ii) to genotype HPV by PCR with primers specific to the major HPV E6 gene (*hpv 06, 11, 16, 18, 31, 33, 35, 45, 58), (iii) to genotype the samples through RFLP, and (iv) to genotype through MicroArray cases of multiple infections. **Results:** So far, 116 samples were tested by PCR and no positive result was found. A nested PCR protocol is on progress to confirm these results. **Conclusion:** This study will contribute to a better understanding of the role of HPV in oral infection and in this way to establish new parameters for prevention and control of lesions in the male population. **Key words:** HPV; PCR; Vaccine.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP19. BIOFILM FORMATION BY POTENTIAL PATHOGENS ASSOCIATED WITH BREAST PROSTHESIS

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Introduction: Mammoplasty uses breast prosthesis to reconstruct or aesthetically repair the mammal region of patients. However, some infections may occur by the attachment of pathogens that have ability to form biofilm. **Objective:** To investigate the capacity of two major pathogens, *Enterococcus faecalis* and *Corynebacterium diphtheriae*, to form biofilm directly in polystyrene microwell plates as well as the effect of collagen and fibrinogen in biofilm formation by these pathogens. **Methods:** We used one reference strain and one clinical isolate of each species. We performed assays in triplicate with tryptic soy broth (TSB), with or without collagen and fibrinogen, using a 96-well polystyrene flat bottom plate for 48h at 37°C. We measured absorbance by spectrophotometry. **Results:** The *E. faecalis* reference and clinical isolates showed, respectively, average absorbance of 0.336 and 0.264 in TSB without proteins, 0.280 and 0.266 in TSB with fibrinogen, and 0.347 and 0.345 in TSB with collagen. The *C. diphtheriae* reference and clinical strains showed, respectively, average absorbance of 0.593 and 0.965 without proteins, 0.803 and 1.219 with fibrinogen, and 0.561 and 1.418 with collagen. All samples showed absorbance four times higher compared to the blank well, which showed average of 0.052. **Conclusion:** All isolates showed a strong capacity to form biofilm in polystyrene wells with or without matrix proteins. Matrix proteins appear to be important to enhance biofilm formation by *C. diphtheriae*. More studies are needed to evaluate the capacity of biofilm formation by other pathogens as well as the ability to form biofilm directly to breast prosthesis.

Key words: Biofilm; *Corynebacterium diphtheriae*; *Enterococcus faecalis*.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP20. INVESTIGATION OF THE ANTIBIOFILM ACTIVITY OF TRIAZOLES AND TETRAZOLES IN *Staphylococcus aureus*, *Staphylococcus epidermidis* and *Escherichia coli*

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Introduction: One of the resistance tools used by human pathogens is the formation of biofilms. Therefore, the formation of biofilm in medical devices is an important virulence factor, being responsible for many hospital-acquired infections. The Triazoles and Tetrazoles demonstrated the ability to inhibit bacterial growth and even eradicate it. **Objective:** Characterize the antibiofilm properties of one Triazol and two Tetrazoles derivatives selected by Minimum Inhibitory Concentration (MIC) test in strains of *Staphylococcus aureus*, *Staphylococcus epidermidis* and *Escherichia coli*. **Methods:** Effect in the biofilm formation: Applies the sub specific inhibitory concentration (0.5 to 0.25 of the MIC) of the antibiotics and apply 200µL of the inoculum above in plate wells. Incubate at 37°C/1h. Perform the reading at a wavelength of 560 nm. Apply crystal violet, dry and proceed a new reading. Effect in the pre-formed biofilm: Repeat the procedure by applying the molecules after 6 or 12 hours of incubation of the bacteria. **Results:** The molecules demonstrated an effect on the disaggregation of the biofilm formed by *S. aureus*. The only triazole acted hindering the formation of the biofilm by *S. epidermidis*. This molecule and a tetrazole presented activity both inhibiting training and accelerating the disaggregation of the biofilm formed by *E. coli*. **Conclusion:** The molecules also display antibiofilm activity, acting inhibiting formation, accelerating the breakdown or in both stages.

Key words: Biofilm; Triazol; Tetrazol.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP21. ENVIRONMENTAL CONTAMINATION OF CHILDREN'S PLAY AREAS IN NATIVIDADE AND NOVA FRIBURGO, RIO DE JANEIRO, BY SOIL-TRANSMITTED HELMINTHS

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Introduction: Data estimate that more than one billion individuals are infected with soil-transmitted helminths (STH), especially in tropical and subtropical regions. Enteroparasites are mainly found in soil, water or food contaminated with feces. Children represent the main risk group for helminthiasis due to poor hygiene, geophagy and onicophagy habits and often these are infected during recreation in parks and squares. **Objective:** Research the environmental contamination by soil-transmitted helminths in different stages of development in public squares used as recreation and leisure areas for children. **Methods:** The environmental contamination by soil-transmitted helminths in public squares was done in Natividade and Nova Friburgo (RJ, Brazil). The analyze of material was assessed using the Hoffman, Pons and Janer technique. A total of 70 soil and sand samples were examined from 7 children's playgrounds from various public parks. Throughout the study, two gender of nematode eggs (*Ascaris lumbricoides* and *Ancylostoma sp.*) and one genus (*Enterobius vermiculares*) of larvae were detected. **Results:** Of the samples analyzed, 37.1% (26/70) soil samples were contaminated by STH eggs and larvae. The most frequently discoveries were eggs from *Ascaris lumbricoides* (22.8%), *Ancylostoma sp.* (7.2%) and *Toxocara sp.* (7.2%), besides *Enterobius vermiculares* larvae (12.8%). Three areas presented mixed contamination with *Ancylostoma sp.* and *Ascaris lumbricoides* eggs. **Conclusion:** These results showed a considerable environmental contamination with soil-transmitted helminths eggs and larvae of the examined urban areas of Natividade and Nova Friburgo (RJ/Brazil) which is a potential source of antropozoonosis. So, public health interventions are need and effective to control soil-transmitted helminth infections.

Key words: Soil-Transmitted; Helminths; Environmental Contamination; Public Health.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP22. ISOLATION OF INTESTINAL MICROBIOTA FROM ALBINO MICE

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Introduction: The term intestinal microbiota refers to the ecosystem formed by aerobic and anaerobic bacteria residing between the wall of the intestines and the layer of mucus that surrounds it, where they unleash different functions in the host organism. This microbiota is acquired during passage through the birth canal, and its final composition is established around two years after the birth of the individual.

Objective: Define the culture medium for better isolation of the resident microbiota in healthy albino mice. **Methods:** Nine adult albino mice of both sexes were used, where the intestines of these animals were removed, separated from other organs and later segmented. For isolation of the microbiota, these intestines were washed with distilled water and PBS and later, washes were placed in 96 plates for further serial dilution. The culture medium used for inoculation of 10 microliters from the dilutions were CLED and MacConkey. **Results:** The presence of colonies of several aspects were observed: opaque yellow, dark and white cells with inhibited growth in the CLED medium and reddish and rosy colonies with mucoid appearance in the MacConkey medium. **Conclusion:** The CLED medium was shown to be more efficient for the isolation of the resident microbiota from albino mice.

Key words: Microbiota; Gut; Albino mice.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP23. GENETIC DIVERSITY OF CANINE PARVOVIRUS CIRCULATING IN RIO DE JANEIRO (2008-2017)

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Introduction: Canine parvovirus (CPV) is an important agent of viral enteritis in puppies. As a consequence of CPV rapid evolution a variety of genetic variants (CPV-2a, CPV-2b and CPV-2c) have been reported circulating worldwide. **Objective:** The purpose of this study was to evaluate the genetic diversity of the VP2 gene of canine parvovirus strains circulating in Rio de Janeiro during 2008-2017. **Methods:** A total of 15 fecal samples, collected from up to one-year old dogs with diarrhea and previously screened for parvovirus DNA by PCR, were analyzed in this study. The sequences were submitted to sequence and phylogenetic analysis of the entire VP2 capsid gene (1755bp). **Results:** Analysis of the deduced amino acid (aa) residues at critical positions that determine the canine host range allowed the identification of the parvoviruses: five sequences were CPV-2a, seven CPV-2b and three CPV-2c. Non-synonymous substitutions were found at residues 297 (Ser→Asn e Ser→Ala) and 324 (Tyr→Leu), the latter has only been found in Brazil and Italy yet and these sites presented with positive selection. The phylogenetic tree revealed that the CPV (2a/2b/2c) sequences containing the 324Leu non-synonymous mutation formed an individual subgroup within the CPV clade. According to the aa changes at residues 564 (Asn→Ser) and 568 (Ala→Gly), a subdivision inside this 324 Leu subgroup could be observed. **Conclusion:** Continuous surveillance is needed to monitor the mechanisms that drive CPV evolution in Brazil and its epidemiological importance. **Key words:** Canine parvovirus; Phylogenetic analysis; Rio de Janeiro.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP24. RISKS FACTORS FOR CERVICAL CANCER IN STUDENTS AT THE FEDERAL FLUMINENSE UNIVERSITY

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Introduction: Human Papillomavirus (HPV) persistent infection is associated to cervical cancer, the fourth most common type in Brazil, is rare in women under 30 years with mortality incidence at 45 to 50 years old. The principal risks factors are smoking, early sexual activity, sex without condom use and multiple partners. The screening is done with colposcology smears (Pap) to diagnostic precursors lesions.

Objective: access the risks factors for cervical cancer in the young university students. **Methods:** questionnaire was applied in 411 students, to evaluate epidemiological and sexual data, between November, 2017 and January, 2018, in the opportunity of the second application dose of HPV vaccine. **Results:** the sample have mean age of 21.6 years and the beginning of sexual practice at 14.6 years old. Tobacco smoke was denied in 98.75% and 54.4% use oral contraceptive. Nevertheless, the mean partners number were 1.53 per year with a broad variation (1 to 10/year) and 20.68% never realized Pap's smear in their lives. In the sexually actives women, 23,85% referred anal practice. The condom regular use was mentioned 44.54% of the cases and 39.49% as sporadic. **Conclusion:** Although the information access is wide, risks factors for Sexual Transmitted Diseases exists in these young adult women. As the interval between the sexual onset and the sample mean age was seven years, it is length to achieve the precursors lesions diagnostic and otherwise prevention is recommended since sexual intercourse begins.

Key words: Risk factors; Cervical cancer; HPV infection.

PÔSTER - POSTER

AREA: RESEARCH IN MICROBIOLOGY AND PARASITOLOGY

MP25. IDENTIFICATION OF THE MINIMUM INHIBITORY CONCENTRATION AND THE MINIMUM BACTERICIDAL CONCENTRATION OF NEW MOLECULES WITH POSSIBLE ANTIMICROBIAL ACTIVITY

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Introduction: The triazoles has been described with the ability to inhibit the formation of biofilms by Methicillin Resistant *Staphylococcus aureus* (MRSA) strains. Tetrazoles derivatives have been described for their antimicrobial properties and even for their ability to destabilize the fungal membrane and thus prevent the growth of this infectious agent. In this way, it becomes interesting to investigate whether the Triazoles and Tetrazoles exhibit activity in front of bacteria causing hospital infection.

Objective: Characterize the antimicrobial properties of Triazoles and Tetrazoles derivatives against *Staphylococcus aureus* HU25, *Staphylococcus epidermidis* ATCC 12228 and *Escherichia coli* ATCC 11775 strains. **Methods:** Microdilution Assay for Minimal Inhibitory Concentration (MIC) was determined according to the Clinical and Laboratory Standards Institute (CLSI 2009). Determination of the Minimum Bactericidal Concentration (MBC): TSA media incubation plates divided into nine fields, received 10 µL of the respective dilution in each field, following incubation at 37°C/24h. After this interval, the field in which there was no bacterial growth has been observed to determine the best MBC value. This is defined as the smallest concentration able of eliminating 99.9% of the inoculum. **Results:** ne 1/3 triazole exhibited inhibitory and bactericidal activity for the three bacteria tested. Based on the tetrazole derivatives tests, one exhibited inhibitory activity against *S. aureus*, the second against the three bacteria and the third showed no activity. None of tetrazole derivatives exhibited bactericidal properties. **Conclusion:** Our results show that both classes of molecules have antimicrobial potential and are even candidates for studies with bacterial biofilms.

Key words: MIC/MBC; Triazoles; Tetrazoles.

PÔSTER - POSTER

AREA: RESEARCH IN MORPHOLOGY

MO01. EVIDENCING ELASTIC FIBERS: CONTEMPORARY FEATURES

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Introduction: Several laboratories use chemical substances that can cause significant effects on human health and the environment. Although histological techniques have been used for a long time for histopathological diagnosis, very little attention has been paid to health effects and environmental effects caused by the dyes and staining procedures. Orcein stain is used to demonstrate elastic fibers and picric acid is used as a background stain to increase the contrast in photomicrographs. Given that, picric acid is an explosive substance and can cause health effects. **Objective:** The aim of this study was to identify a less toxic substance that can be used for background staining in the Taenzer-Unna acid Orcein method, substituting for picric acid, using tissue sections embedded in paraffin. **Methods:** Using Orcein staining in fragments of mammals, we tested as a possible background solution the light green, orange G and picric acid. **Results:** We verified that the Orange G stain did not promote a good contrast. The picric acid promoted a good contrast but with restrictions since this substance is very dangerous. The light green revealed to be an excellent background staining, facilitating the visualization of elastic fibers, even the thinner fibers and in cross-section, not seen in the traditional method. **Conclusion:** The study demonstrated that light green was the best background dye for Orcein staining. In addition, we can verify that the histological techniques must be updated, since they have been developed in a long time ago.

Key words: Histochemistry; Elastic fibers; Environment.

PÔSTER - POSTER

AREA: RESEARCH IN MORPHOLOGY

MO02. HISTOCHEMICAL AND IMUNO- HISTOCHEMICAL ANALYSIS OF STOMACH OF RHESUS MONKEY (*MACACA MULATA*) (CERCOPITHECIDAE, PRIMATES)

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Introduction: The anatomical, physiological and histological similarities between human and non-human primates allow comparative studies in gastroenterology.

Objective: To analyze the histological structure of the stomach, using several techniques in the regions of cardia, fundic, pyloric and den. **Methods:** Ten monkeys were used. The stomach fragments were fixed (10%formaldehyde), processed and included in paraffin. The glass microscope slides were stained with hematoxylin and eosin, Alcian Blue, PAS and immunohistochemistry with Anti 5-HT antibodies.

Results: The region of the cardia presents deep gastric pits, associated with branched tubular glands in basophilic cells. Serotonin secretory cells were observed all over the gland, being of the closed type. No presence of coating epithelium or predominance of mucosal cells was observed. The mucosa presents the simple mucosecretory cylindrical epithelium PAS +. The fundal region presents smaller gastric pits, the surface of which is covered by the same PAS + epithelium and well-developed gastric glands, formed by parietal and principal cells. The region of the body shows the mucosal difference when compared to the bottom. The serotonin immunoreactive cells were predominant in the colon and base of the gastric glands. The antrum region has deep pits and short gastric glands, represented by the presence of mucosecretory cells. **Conclusion:** Despite the morphological similarities between primates and non-human primates, we can note relevant differences along the gastrointestinal tract and in the distribution of serotonin secreting cells.

Key words: Histochemistry; Serotonin; Rhesus monkey.

PÔSTER - POSTER

AREA: RESEARCH IN MORPHOLOGY

MO04. EVALUATION OF BULBOSPONGIOSUS MUSCLE IN THE URETHRAL STENOSIS

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Introduction: The bulbospongiosus muscle (BM) originates from the median raphe on the ventral face of the penis bulb. Its function is to aid the emptying of urine and semen and promotes contraction of the penis bulb and spongy body. Urethral stenosis is a narrowing segment of the urethra, which can result in decreased or even complete disruption of urinary flow leading to different complications.

Objective: To characterize by quantitative methods the BM after urethral stenosis.

Methods: Samples of 16 BM was studied. They are divided into the following groups: control group: 7 patients submitted to perineal urethroplasty (mean age=60.14 years old) and 9 patients with bulbar urethral stenosis (mean age=64.57 years old) submitted to open urethroplasty. The samples were fixed in 4% buffered formalin and processed for histomorphometrical analysis using the ImageJ software. Parametric data were statistically compared with the unpaired t test Student, whereas non-parametric data were compared with the Mann-Whitney test, considering $p < 0.05$.

Statistical analysis was performed using GraphPad Prism 6.0 software. **Results:** Quantitative analysis of collagen showed no significant difference between control group (11.69 ± 4.19) and the stenosis group (10.33 ± 6.60), $p = 0.7007$. The diameter of muscle fibers showed no significant differences between control group (38.09 ± 8.16) and stenosis group (39.16 ± 4.33), $p = 0.7431$. Quantitative analysis of elastic system fibers showed significant differences between control group (3.86 ± 1.60) and stenosis group (7.02 ± 2.71), $p = 0.0163$. **Conclusion:** The histological analysis showed that significant increase in the elastic system fibers in the urethral stenosis and small changes in quantify of collagen and diameter of fibers of bulbospongiosus muscle.

Key words: Bulbospongiosus muscle; Urethral stenosis; Morphometric.

PÔSTER - POSTER

AREA: RESEARCH IN MORPHOLOGY

MO05. HISTOLOGY AND HISTOCHEMISTRY OF THE STOMACH OF IGUANA

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Introduction: Morphological studies on the structure of the digestive tube are essential for understanding the lifestyle of vertebrates, such as reptiles, in addition to their physiological aspects. The green iguana belongs to the Squamata Order, Iguanidae family. **Objective:** Analyze the histological and histochemical structure of segments of the stomach, with the purpose of providing information that allows analysis of the species and a comparison among reptiles. **Methods:** Five iguanas of both genders, collected from the Barão do Grajaú-MA, 54501-2 Sisbio license, were used. The stomach fragments were fixed in 10% Formaldehyde and embedded in paraffin. The slides were stained by the techniques of Hematoxylin-eosin and Gomori trichrome, Periodic acid- Schiff (PAS) and Alcian Blue (AB). **Results:** The anterior stomach presents folds along its entire length, coated by simple columnar epithelium and it was observed that the lamina propria is constituted by gastric glands formed basically by oxynticopeptic cells. Two muscular layers: an inner circular one and an outer longitudinal one. In the middle region the mucosa presents itself with less folds with the gastric glands being smaller, still with the presence of the oxynticopeptic cells, with an increase of the inner muscle. In the posterior region these gastric glands present themselves with the predominance of mucous cells and still with the thick inner muscular layer. PAS and AB positive. **Conclusion:** Although it follows the general structure of the organs composed of mucosa, submucosa, muscular and adventitia/serosa layer vertebrate pattern, the stomach of the iguana reveals distinct characteristics for the species.

Key words: Reptile; Stomach; Iguana.

PÔSTER - POSTER

AREA: RESEARCH IN MORPHOLOGY

MO06. TRIBULUS TERRESTRIS CAN CHANGE THE MORPHOLOGY OF THE BLADDER? A STUDY DEVELOPED IN AN ANIMAL MODEL OF ARTERIAL HYPERTENSION

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Introduction: *Tribulus terrestris* (TT) has been used in the fitness center and urological practice to increase serum testosterone levels. It is known that this treatment is related to morphological, including systemic arterial hypertension. However, it isn't known what happens in the bladder of hypertensive and normotensive men after this supplementation. **Objective:** To investigate whether treatment with TT causes histomorphometric changes in the bladders of control and SHR rats. **Methods:** 32 rats were divided into 4 groups (n = 8). C: group composed of untreated Wistar Kyoto (WKY) rats; C+T rats: treated with WKY TT (100 mg / day); H: untreated SHR; H+T: TT treated SHR (100 mg / day). TT was administered by gavage for 40 days. The bladder was then collected and fixed at 3.7%. We evaluated the following parameters: bladder cross-sectional area, epithelial height and collagen density between muscle fibers. A statistical analysis was performed with ANOVA and considered significant when $p < 0.05$. **Results:** The bladder area, there was a reduction of 36.3% in H, when compared to group C. The height of the transitional epithelium reduced 33.6% in C+T when compared to group C. In addition, there was no significant difference in the other groups. Collagen between muscle fibers increased 95.6% in C+T when compared to C. There was a 55% increase in H when compared to group C. There was also a 25.3% increase in H+T when compared to group H. **Conclusion:** Treatment with TT promoted changes in the bladder with arterial hypertension, possibly decreasing urination of the bladder.

Key words: Bladder; *Tribulus Terrestris*; Systemic arterial hypertension.

PÔSTER - POSTER

AREA: RESEARCH IN MORPHOLOGY

MO07. THE FINASTERIDE CAN PROMOTE KIDNEY CHANGES? A STUDY DEVELOPED IN A MODEL OF BENIGN PROSTATIC HYPERPLASIA

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Introduction: Finasteride used to treat benign prostatic hyperplasia (BPH), by reducing prostate volume, microvascular density and endothelial growth factor's expression. However, recent studies show this treatment may alter renal function, although what occurs in renal morphology after mentioned treatment is unknown.

Objective: The objective of this study is to analyze these unknown effects of Finasteride in renal morphology. **Methods:** Forty rats were divided into 4 groups: Ctrl - group of Wistar Kyoto rats; Ctrl + F - group of Wistar Kyoto rats treated with finasteride (5mg/kg/day); BPH - group of SHR (spontaneously hypertensive rats); BPH+F - SHR treated with finasteride (5mg/kg/day). Treatments occurred for 40 days by gavage. Consecutively, the animals were killed, and their kidneys fixated in 3.7% formaldehyde and processed for histomorphometric analysis. The cortex/non-cortex ratio, glomerular volumetric density and the volume weighted glomerular volume (VWGV) were assessed. Statistical analysis utilized one-way ANOVA and Bonferroni post-test, considered significant when $p < 0.05$. **Results:** The cortex/non-cortex ratio decreased by 20.48% in the Ctrl+F group compared to the Ctrl group; reduced by 36.4% in BPH+F and increased by 28.9% in BPH when both compared to Ctrl. The glomerular volumetric density decreased by 56.4% in Ctrl+F group when compared to Ctrl, and there was a 64.9% reduction in BPH+F, compared to BPH. In relation to the VWGV there was a reduction of 31.2% in Ctrl+F when compared to Ctrl; and reduction of 39.8% in BPH+F when compared to HPB. **Conclusion:** Finasteride significantly altered renal morphology, decreasing glomerular density and volume.

Key words: Finasteride; Morphology; Kidney.

PÔSTER - POSTER

AREA: RESEARCH IN MORPHOLOGY

MO08. HUMAN DISSECTION REPORT: ANATOMICAL VARIATIONS IN THE MESOGASTRIC AND HYPOGASTRIC REGIONS

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Introduction: Inferior Vena Cava (IVC) can duplicate between the sixth and eighth week of development. The patients are asymptomatic, and it study necessary for surgeries purposes. **Objective:** Report, anatomical comparisons of the IVC variations. **Methods:** Three cadavers were dissected in UERJ's morgue. Measurements were made with a 150mm digital caliper in three vessels: common iliac veins and IVC. The IVC was measured in three spots: near the common iliac vein's junction, near the lower mesenteric vein and below the celiac trunk. Only one corpse presented Duplicated IVC (DIVC). A comparison was made obtaining a qualitative analysis. **Results:** The average diameter of the left common iliac vein in both normal cadavers was 21.9cm; the cadaver with DIVC had a diameter of 5.7cm. In correlation to the right common iliac vein, the normal average diameter was 15.1cm, when compared to 10.9cm of the DIVC. In correlation to normal IVC, when measured near the iliac veins junction, close to the inferior mesenteric and below to the celiac trunk, we obtained an average diameter of 24.4cm, 20.7cm and 20cm. When comparing the DIVC, we noticed variations of 16.9cm, 27.5cm and 26.1cm. DIVC presented values of 7.6cm next to the iliac veins junction and 12.3cm near the mesenteric vein. We were unable to measure the diameter of DIVC Below the celiac trunk. **Conclusion:** The DIVC presented reduced diameter of the left common iliac vein and lesser diameter in the three segments of the IVC. An anastomosis with the left renal vein was also noticed.

Key words: Anatomy; Duplicate Cava vein; Inferior Vena Cava.

PÔSTER - POSTER

AREA: RESEARCH IN MORPHOLOGY

MO09. INFLUENCE OF THE EXTRACELLULAR MATRIX DURING ENDOCHONDRAL OSTEOGENESIS

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Introduction: The development of the vertebral body in *Gallus gallus domesticus*, Leghorn breed, which provides a good model for the study of osteogenesis, requires macromolecules of the extracellular matrix (ECM) and cell-surface receptors, important regulators of cell behavior. **Objective:** To identify the expression of extracellular material in the tissue involved in the processes of bone formation.

Methods: The distribution of tenascin-C, fibronectin, and types II and IX collagen was studied in chick embryos at vertebral body development level. The immunohistochemical method included biotinylated secondary antibody and ExtraAvidin peroxidase reagent (LAB method) (Sigma) on fixed paraffin-embedded specimens. The following antibodies was used: antitenascin-C (Biohit), antifibronectin (Chemicon), anticollagen type II (Chemicon) and anticollagen type IX which recognize epitopes in the domains COL2 and NC2 of the chain $\alpha 1$ IX (Chemicon).

Results: The results showed that reactions to the antifibronectin and anticollagen type II antibodies were intense in the ECM of hypertrophic cartilage and an absence of reaction for anticollagen type IX and antifibronectin antibodies in this region. The trabecular bone presented its edges intensely reactive for antifibronectin and anticollagen IX antibodies. Also, an intense reaction was found to fibronectin in osteocytes and to tenascin-C in bone ECM of this newly formed tissue. **Conclusion:** The results corroborate the literature data in different experimental models systems and add knowledge about the modulation of the function of these ECM components during periods of active modeling of the vertebral body and plasticity, suggesting the occurrence of interaction between these components, surface receptors and the cytoskeleton.

Key words: Osteogenesis; Extracellular Matrix; Immunohistochemical.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP01. IMPACT OF L-ARGININE AND AEROBIC TRAINING ON THE INFLAMMATORY ENVIRONMENT AND INSULIN RESPONSE IN CARDIOMYOCYTES IN CARDIOVASCULAR DISEASE

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Introduction: During cardiovascular disease development there are changes in myocardium related to pro-inflammatory profile and insulin resistance. Physical training and L-arginine supplementation have anti-inflammatory potential and improve insulin resistance, but it is not clear whether there is a causal relationship between them in cardiometabolic disease. **Objective:** To investigate the effects of physical training and L-arginine on inflammation in insulin response in cardiomyocytes in cardiovascular disease. **Methods:** Adult male Wistar rats were allocated in five groups: Control (C), Fructose (F; 10% fructose in water), Fructose Training (FT; moderate intensity), Fructose Arginine (FA; 880 mg/kg/day via gavage) and Fructose Arginine Training (FTA). At the end of experiment, it was performed biochemical analysis (ELISA) insulin and inflammatory proteins expression in the cardiomyocyte (Western Blot) and histological analyses. **Results:** Fructose leads to an increased insulinemia, triglyceridemia and body fat. Both treatments normalized these parameters ($P < 0.05$). Cardiomyocyte transverse area was increased in FT ($723.50 \pm 76.63 \mu\text{m}$) and FA ($695.50 \pm 46.15 \mu\text{m}$) compared to C ($469.60 \pm 30.12 \mu\text{m}$) ($P = 0.02$), showing hypertrophy of left ventricle. Ratio between intramyocardial vessels and cardiomyocytes volumes was lower in F (0.19 ± 0.02) and FTA (0.22 ± 0.01) compared to C (0.31 ± 0.02) and to FT (0.29 ± 0.02) and in FA (0.25 ± 0.02) compared to C ($P = 0.0004$), showing there was less vascularization in these groups. There was no difference in proteins AKT ($P = 0.14$), PI3K ($P = 0.92$) and eNOS ($P = 0.63$) expression. **Conclusion:** Aerobic training, with or without arginine, was able to normalize insulin and triacylglycerol and reduce body fat. Training and

arginine singly enlarged cardiomyocytes. Fructose decreased vascularization of cardiomyocytes, being attenuated by training.

Key words: L-arginine; Aerobic training; Cardiovascular disease.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP02. IMPACT OF AEROBIC TRAINING ON THE DEVELOPMENT OF CARDIOMYOCYTE CHANGES DURING THE INSTALLATION PROCESS OF CARDIOMETABOLIC DISEASE

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Introduction: Cardiometabolic disease (CMD) is responsible for cardiomyocyte alterations, such as increase in mass and vascularization. Insulin improves cardiac function through stimulation of myocardial vascularization, cell proliferation and contractile proteins expression and aerobic exercise training seems to modulate insulin signaling in cardiomyocytes. **Objective:** To investigate the cardioprotection mechanisms of aerobic training on cardiomyocytes in Wistar rats during the cardiometabolic disease installation. **Methods:** Male Wistar rats (N=8/group), adults, were allocated in two groups: Control (C) and Fructose (F; 10% fructose). After two weeks, some of the animals were euthanized. After this period, each group was subdivided into two groups: sedentary (C and F) and 8-week of moderate exercise training group (CT and FT). Plasma insulin was quantified by ELISA, triglyceride by colorimetric kit and body composition was determined by measuring total lipid content in rat carcasses. Expression of proteins IR β , PI3K, AKT, pAKT, ERK, pERK was performed by the Western Blot. **Results:** After eight weeks, F group presented insulin resistance, higher total lipid content in carcass and hypertriglyceridemia, and the FT had normalized all these variables (P<0.05). The training did not induce changes in expression of IR β (P=0.07) and ERK (P=0.15), whereas there were increases in expression of AKT (P=0.03) and pAKT (P=0.02) in the CT, FS and FT, and pERK expression in CT and FT (P=0.01) and PI3K in FS e FT (P=0.005). **Conclusion:** Even with the high fructose AKT activation, the training modulated part

of insulin signaling pathway, increasing the ERK mitogenesis pathway through I β , PI3K and AKT activation.

Key words: Fructose; Cardiovascular disease; Aerobic training.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP03. AEROBIC TRAINING MODULATES THE ANTIOXIDANT RESPONSE MEDIATED BY VIA NRF2 / KEAP1 IN EXPERIMENTAL MODEL OF CHRONIC FRUCTOSE CONSUMPTION

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Introduction: High fructose intake has been shown to increase oxidative stress implicated in the pathogenesis of cardiovascular diseases. The nuclear factor 2 related to erythroid 2 (Nrf2) regulates genes involved in the production of a wide range of antioxidant enzymes and detoxification genes. Aerobic exercise can play an important role in increasing the antioxidant response. **Objective:** To investigate the effects of aerobic exercise modulating cardiac Nrf2/Keap1 pathway in an experimental model of chronic fructose consumption. **Methods:** Male C57BL/6 mice were randomly assigned to Control, Fructose (20% fructose in drinking water), Exercise (treadmill exercise at moderate intensity), and Fructose+Exercise groups (n=10). Maximum exercise testing, energy intake and body weight were measured after 12 weeks. Circulating metabolic markers were analyzed by using colorimetric and enzyme-linked immunosorbent assay. Cardiac Nrf2, Keap1, and antioxidants (HO-1, NQO1, TXNRD1, PDRX1) levels were measured by real-time polymerase chain reaction (RT-PCR) and western blot analyses. **Results:** After 12 weeks, the energy intake, body weight, insulin and glucose levels of the groups were similar. Maximum exercise testing was increased in the Exercise groups. Fructose intake increased circulating cholesterol and triglycerides, which were reduced by exercise. Exercise increased the cardiac mRNA and protein expression of Nrf2/Keap1 ratio, and protein expression of HO-1, TXNRD1 and PDRX1, in fructose-fed mice. mRNA

expression of NQO1, TXNRD1 and PDRX1 in the groups were similar. **Conclusion:** These findings suggest that aerobic exercise at moderate intensity confers modulatory cardiac effects, improving antioxidant defenses via Nrf2/Keap1, and it is a potential nonpharmacological approach against fructose-induced cardiometabolic diseases.

Key words: Exercise; Fructose; Antioxidants.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP04. EFFECTS OF DIGOXIN ON DIFFERENT B LYMPHOCYTE POPULATIONS IN MICE

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Introduction: Digoxin (DIGO) is a cardiotonic glycoside capable of inhibiting the Na⁺K⁺ ATPase pump and is commonly used in the treatment of heart failure. In addition to the cardiotonic effects, DIGO has effects on the immune system. The digoxin effects on Th17 lymphocytes are already well known, but little is known about their action on B lymphocytes. Therefore, this study aims to show the effects of DIGO on B lymphocyte populations. **Methods:** *In vivo* experiments were used Balb/C mice (female, 4-16 weeks old) injected intraperitoneally (i.p) with 0,3 mg/kg Digoxin for three consecutive days. Twenty-four hours after the last injection, the cells of the spleen and mesenteric lymph nodes were collected, stained with monoclonal antibodies and analyzed by flow cytometry. Blood was also collected in the retro orbital plexus to obtain serum and perform an enzyme-linked immunosorbent assay (ELISA). **Results:** *In vivo* results shows that the treatment with DIGO used in the clinical concentration increased the absolute number of B lymphocytes in spleen. This change cannot be explained by an increase in cell proliferation in this organ. In the peritoneal cavity, DIGO promoted a reduction in the percentage and absolute number of B1 cells. In mesenteric lymph nodes we did not observe any significant change, discarding the possibility of B lymphocytes reduction in this organ. In

addition, DIGO significantly increased IgG and IgM levels in animal serum.

Conclusion: Digoxin was able to alter the humoral response in mice.

Key words: Immunoregulation; B Lymphocytes; Digoxin.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP05. FOOD IMAGES DATABASE TO BE APPLIED IN PSYCHOPHYSIOLOGICAL STUDIES.

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Introduction: The extent and purpose of food processing have been changing globally, and that these changes were driving the emergence of a harmful global food system and the pandemic of obesity and other nutrition-related chronic non-communicable diseases. The NOVA classification groups foods according to the extent and purpose of the processing they undergo. **Objective:** The present study aims to create a database of images depicting unprocessed or ultra-processed food matched in physical aspects to be applied in psychophysiological studies. **Methods:** Eight foods of each category (unprocessed and ultra-processed) were selected on the internet through google's tool "advanced search" and through a photographer's production. The groups were paired by flavor and by physical aspects (brightness, contrast, spatial frequency). The nutritional content of the unprocessed foods was collected in the tables of nutritional composition TACO and IBGE and of the ultra-processed foods was collected from the labels and the internet. The t-test was applied to compare the physical aspects and nutritional content between food categories. **Results:** The images did not differ in terms of brightness ($p=0.79$), contrast ($p=0.61$) and spatial frequency ($p=0.56$). The ultra-processed food presented a greater content of carbohydrates and sodium than the unprocessed ($p<0.05$). **Conclusion:** A database of food images can be a tool for future tests of psychophysiology. Ultra-processed foods contain inferior nutritional quality when compared to unprocessed food.

Key words: Ultra-processed food; Public Health; Psychophysiology.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP06. ENDOTHELIAL RESPONSES MEDIATED BY ANGIOTENSIN II TO MENTAL STRESS IN OVERWEIGHT / OBESITY INDIVIDUALS

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Introduction: Acute mental stress (MS) leads to transient endothelial dysfunction in overweight/obesity grade 1. The renin-angiotensin system appears to play an important role in increasing oxidative stress via angiotensin II type 1 receptors (AT1R). Considering that angiotensin II generates an oxidative imbalance mediated by AT1R, it is unknown whether this process is responsible for transient endothelial dysfunction present in MS in overweight/obesity grade 1. **Objective:** To determine endothelial responses of angiotensin II mediated by AT1R to MS in overweight/obesity grade I men. **Methods:** Nine overweight/obesity grade I men (28 ± 7 yrs; 29.2 ± 2.5 kg / m²) were enrolled. Two randomized experimental sessions were developed: oral administration of placebo (PL) and olmesartan as AT1R blockade. Venous blood was drawn before and during the last minute of a 5-minute MS test (Stroop Color Word Test) while endothelial function assessment (flow-mediated dilation, FMD) were determined before and 30 minutes after the test. Endothelial microparticles (EMP; CD41-CD31+AnnexinV+) and endothelial progenitor cells (EPC; CD45dimCD34+VEGFR2+) were measured by flow cytometry. **Results:** At baseline, there were no differences in hemodynamic variables between sessions. During MS, systolic and diastolic blood pressures, and heart rate increased similarly in both sessions ($p=0.01$ vs. baseline). FMD was reduced after MS ($p=0.01$ vs. baseline PL), whereas FMD increased after MS during AT1R blockade ($p=0.01$ vs baseline; $p=0.01$ vs PL). No significant differences were observed in EMP ($n=5$) and EPC ($n=7$) in either moments or sessions ($p>0.05$). **Conclusion:** AT1R blockade abolishes the impaired endothelial response to mental stress in overweight/obesity grade I.

Key words: Endothelial function; Endothelial progenitor cells; Endothelial microparticles.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP07. EFFECTS OF ASCORBIC ACID ON OXIDATIVE AND HEMOSTATIC RESPONSES TO MENTAL STRESS IN OVERWEIGHT AND OBESITY SUBJECTS

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Introduction: Mental stress (MS) is related to endothelial dysfunction in overweight/obesity grade I subjects. It is believed that the pro-oxidant profile associated with an hemostatic imbalance may contribute to the deleterious effects of stress on endothelial function. However, it is unknown whether administration of ascorbic acid (AA), a potent antioxidant, could restore oxidative and hemostatic balance during MS in those subjects. **Objective:** To determine the effects of AA infusion on oxidative and hemostatic responses to MS in overweight/obesity grade I men. **Methods:** Seven overweight/obesity grade I men [28±7 years; 29.1±2.7 kg.m²] underwent to two experimental sessions in a random order: AA (3g) and placebo (PL, 0.9% NaCl) infusions. The subjects underwent the Stroop color word test for five minutes to induce MS after infusion. Venous blood samples were collected at baseline and at the last minute of MS for the measurement of thiobarbituric acid reactive substances (TBARS; colorimetric assay) and platelet microparticles (CD41+ PMP; flow cytometry). **Results:** At baseline, no differences were observed in hemodynamic, TBARS and PMP measurements between sessions. Systolic and diastolic blood pressures, and heart rate increased similarly during MS in both sessions (p<0.05 vs. baseline). AA prevented the exacerbated response of TBARS (PL, Δ1.2±1.0; AA, Δ-0.7±0.8; p=0.02) and PMP (PL, Δ45±62; AA, Δ-47±091; p=0.03) to MS. **Conclusion:** Ascorbic acid seems to minimize the oxidative and hemostatic imbalance induced by mental stress through the inhibition of lipid peroxidation and platelet microparticles release in overweight/obesity grade I men.

Key words: Mental Stress; Ascorbic acid; Hemostasis.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP08. HIGH EXERCISE VOLUME POSITIVELY MODULATES THE RENIN-ANGIOTENSIN SYSTEM AND PROTECTS THE HEART OF OBESE RATS

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Introduction: The renin-angiotensin system (RAS), involved in obesity and cardiovascular disease, can be modulated by exercise training (ExT). **Objective:** To evaluate volume exercise effects on RAS in heart of obese rats. **Methods:** Male Wistar rats were fed a standard chow (SC) or high fat (HF) diet for 32 weeks. From 20th week, HF group was divided into: sedentary (HF), low (LEV-150min/week) and high (HEV-300min/week) exercise volume. After 12 weeks of aerobic treadmill training, body mass (BM), systolic blood pressure (SBP), heart rate (HR), lipid, glucose and inflammatory profile, stereology and protein expression of RAS components in left ventricle were assessed. The data are presented as mean±SD and comparisons were made using one-way ANOVA followed by Holm-Sidak post hoc test. **Results:** HF showed increased BM, SBP and HR, glucose intolerance, insulin resistance, hypercholesterolemia and hypertriglyceridemia compared to SC group. Both trained groups reversed these parameters. Plasmatic IL-6 and protein expression of IL-6 and TNF- α in HF were increased compared with the SC, and both trained groups reversed these parameters. HF and trained groups showed hypertrophied cardiomyocytes compared to the SC, but only trained groups showed elevation of pAkt/Akt protein expression compared to SC and HF groups. HEV showed decreased protein expression of the classical arm (ACE/AT1R) and increased the counter-regulatory arm (ACE2/MasR) compared to HF group. **Conclusion:** ExT can protect the heart from HF diet effects. HEV is associated to increased cardioprotection and shifts the balance of RAS toward ACE2/MasR arm.

Key words: Exercise training (ExT); Cardioprotection; Renin-Angiotensin System (RAS).

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP09. INVESTIGATION OF ANTI-INFLAMMATORY AND ANTIOXIDANT ACTIVITIES OF CILOSTAZOL IN HYPERCHOLESTEROLEMIC RATS

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Introduction: Cilostazol is a phosphodiesterase 3 inhibitor and its actions are vasodilator, antiplatelet, anti-inflammatory and antioxidant. Cardiovascular diseases are the major cause of death in the world. Then it is necessary to seek for new applications for old drugs. **Objective:** Identify the anti-inflammatory and antioxidant activities of cilostazol in heart of hypercholesterolemic rats. **Methods:** Male Wistar rats were randomly divided into three groups: control (C), fed standard chow diet; a hypercholesterolemic diet (HCD) group; and a hypercholesterolemic diet + cilostazol (HCD+CIL) group. At 31st diet day, it was performed the treatment with cilostazol. The animals were euthanized under anesthesia. Blood samples were collected for molecular and biochemical analysis. Data were analyzed using one-way ANOVA. **Results:** The hypercholesterolemic diet increased lipid profile and malondialdehyde compared to the C group. Cilostazol reduced the lipid profile and malondialdehyde. This group has presented an increase of TNF- α , ICAM-1, IL-1, IL-6. Cilostazol was able to reduce these levels. In Western blot analysis, we have observed that HCD group presented an increase of pNF κ B/NF κ B ratio and a decrease of I κ B- α protein expression, compared to C group. Cilostazol decreased the pNF κ B/NF κ B ratio. **Conclusion:** This study demonstrated the cardioprotective effects of cilostazol. **Key words:** Cilostazol; Anti-inflammatory; Antioxidant.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP10. HIGH EXERCISE VOLUME IMPROVES INSULIN SIGNALING AND INFLAMMATORY STATUS IN SKELETAL MUSCLE OF OBESE RATS THROUGH RENIN-ANGIOTENSIN SYSTEM REGULATION

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Introduction: Metabolic Syndrome (MS) is a cluster of metabolic risk factors which increases the chances of development of cardiovascular diseases and diabetes mellitus 2. **Objective:** To evaluate the effects of different chronic aerobic exercise volumes upon the Renin-Angiotensin System (RAS), insulin and inflammatory pathways and MS parameters in rat skeletal muscle in a diet-induced obesity model. **Methods:** Wistar rats were fed a standard chow (SC) or high-fat diet (HF) for 32 weeks. From 20th week, HF rats were divided into sedentary group (HF), low exercise volume (LEV, 30min/day, 5 days/week) and high exercise volume (HEV, 60 min/day, 5 days/week), both with 60% intensity in maximal exercise test. After 12 weeks of aerobic training, it was assessed RAS, insulin and inflammatory pathways. The data are presented as mean±SD and comparisons were made using one-way ANOVA followed by Holm-Sidak post hoc test ($P < 0.05$). **Results:** There was no difference for ACE expression among the groups. Nevertheless, HF presented increased AT1R expression compared to SC group and only HEV reduced AT1R expression compared to HF. MAS receptor and total Akt protein expression was lower in HF in comparison to the SC. Only the HEV increased MAS receptor expression, but both trained groups increased Akt expression. Moreover, HF presented an increase in PTP1B protein expression. IκB-α protein expression was decreased in HF and both trained groups showed an increase of that one. **Conclusion:** HEV, but not LEV, could support ACE2/MAS receptor arm in skeletal muscle, promoting high protection against obesity and insulin resistance.

Key words: Chronic Aerobic Exercise; Renin Angiotensin System; Insulin Resistance.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP11. EVALUATION OF TRIBUTYLTIN SUB-CHRONIC ADMINISTRATION IN PLATELET AGGREGATION

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Introduction: The tributyltin (TBT) is used as antifouling paints by shipping companies. TBT induces an endocrine syndrome known as imposex. The molecular mechanism associated to that remains unclear. There are evidences that the administration of TBT to rats induces vascular dysfunction due to oxidative stress and morphological damage, enhancing cardiovascular risk factor. **Objective:** The present study aims to evaluate the properties of the sub-chronic administration of TBT in platelet aggregation. **Methods:** Adult male (250- 300g) and female (190- 250g) Wistar rats were randomly divided into three groups (n=10, for each group): Control group (C), TBT 500ng/kg/day group, TBT 1000ng/kg/day for 30 days administrated via gavage. The rat blood was removed and prepared by centrifugation to obtain platelet-rich plasma (PRP). The platelet aggregation was induced by ADP (0.5 μ M, 1 μ M, 5 μ M) and collagen (0.5 μ g/mL, 1 μ g/mL, 5 μ g/mL). Data were analyzed using student's t-test, *p<0.05. **Results:** In the platelet aggregation induced by ADP and collagen, TBT administration promoted an inhibition (% ADP 1 μ M Platelet Aggregation in females: 44.3 \pm 3.2%* TBT 500; 50.1 \pm 2.1%* TBT1000, compared to control 61.7 \pm 2.1%), (% Collagen 1 μ g Platelet Aggregation in males: 69.7 \pm 1.7%* TBT 500; 62.2 \pm 2.1%* TBT 1000, compared to control 72.2 \pm 2.2%). **Conclusion:** This study showed potential cardiovascular toxicological effects associated to TBT exposition. When we evaluated the effect of TBT in different doses in the platelet aggregation, we observed an interesting antiaggregating effect. Our results indicate that TBT has a singular response that can be strictly related to cardiovascular disease development.

Key words: Platelet aggregation; TBT; Cardiovascular toxicity.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP12. POSITIVE AFFECT MEDIATES THE MAINTENANCE OF GOAL-RELEVANT INFORMATION IN WORKING MEMORY IN FACE OF UNPLEASANT DISTRACTORS

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Introduction: Many studies have evidenced a beneficial effect of Positive Affect (PA) on cognitive control and emotional regulation. **Objective:** The aim of this study was to evaluate if PA plays a role on information maintenance at Working Memory and how it would interplay in the face of emotional distractors. **Methods:** Twenty-nine volunteers completed the Positive and Negative Affect Schedule (PANAS) and performed a change detection task preceded by a neutral or an unpleasant image, while the EEG data was recorded. The task consisted of two stimuli arrays composed by two or four colored squares presented sequentially, and participants should indicate whether the sequential arrays were identical or different. The Contra-Lateral Delay Activity (CDA) and the Late Positive Potential event-related components indexed the Working Memory Capacity (WMC) and the emotional reactivity, respectively. **Results:** Simple linear regressions were undertaken and showed that PA predicted the LPP elicited by unpleasant images following a 4 squares' task ($R=0.53$, $R^2=0.28$, $p < 0.01$), and predicted the WMC during the unpleasant condition ($R=0.40$, $R^2=0.16$, $p < 0.05$). **Conclusion:** These data demonstrate that PA is related with the capability of maintaining a high load task active in mind, overpowering the intrusive effects of unpleasant images. Hence, PA may be a mediator at maintaining the goal throughout a task, avoiding its disruption by distractors.

Key words: Positive affect; Working memory; Event-related potential.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP13. EVALUATION OF ACYLIDRAZONE DERIVATIVES IN PLATELET AGGREGATION INDUCED BY COLLAGEN AND ADP

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Introduction: Platelets play a central role in the atherosclerosis lesion chronification, and its activation is relevant for the development of ischemic conditions. Inhibition of the platelet activity is important in the prevention of these events. The *N*-acylhydrazonic compounds present different biological activities, where we can highlight their antiplatelet properties. **Objective:** The present study aims to investigate the antiplatelet effects of new *N*-acylhydrazone derivatives. **Methods:** Wistar rats (200-250g) were euthanized under ketamine and xylazine anesthesia. The rat blood was removed by cardiac puncture. The rat platelet-rich plasma (PRP) was prepared by centrifugation at 250 × g for 10 min at room temperature. The platelet aggregation *ex vivo* was monitored using a lumi-aggregometer. The PRP was incubated by five minutes with each substance (100 μM; 300 μM). The aggregation was induced by ADP (5 μM) and collagen (5 μg/ml). Data were analyzed using Student's t-test, P < 0.05. **Results:** In the evaluation of Collagen-induced platelet aggregation in PRP of male Wistar rats, we observed a potential antiplatelet effect to A9 and B2 compounds (A9: 44.40±5.51%, B2: 48.60±1.20%), compared to DMSO (70.71 ± 5.93%). In PRP from human volunteers, compound A9 was able to inhibit the second wave of aggregation by 100%, as well as inhibited by 65.2±3.69% at the concentration of 300 μM in the first wave of aggregation. **Conclusion:** This study showed the antiplatelet effect of *N*-acylhydrazone derivatives, possibly associated with the inhibition of TXA2 production.

Key words: Platelet; Aggregation; *N*-acylhydrazone.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP14. CARDIORESPIRATORY CAPACITY EVALUATION THROUGH EFFORT ERGOMETER TEST IN OFFSPRING FROM FEMALE RATS SUBMITTED TO ENERGY RESTRICTION DURING LACTATION

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Introduction: Previous work of our research group has demonstrated that the reduction about 30% of calorie intake by female rats during lactation promotes weight lost in this period. In parallel, the offspring of these mothers presents a lower body weight compared to their respective controls. Apparently, animals from restricted mothers remain thinner through adulthood, despite the higher abdominal circumference noticed in male rats and the upper body mass index observed in females compared to their controls. These data suggest that maternal energy restriction during lactation may increase cardiovascular risk in the offspring.

Objective: The aim of the present work was to evaluate cardiorespiratory capacity of the descendants from female rats submitted to energy restriction during lactation.

Methods: Pregnant female rats were randomly divided into 2 groups during delivery. Just 70% of energy given to non-restricted dams was offering to restricted dams during lactation. After weaning, male and female pups were identified as control and restricted offspring depending on their progenitors. All animals were submitted to maximal effort ergometer test at postnatal day 30 being recorded time spent, distance travelled and maximal velocity developed during the experiment. Data were analyzed by Student *t* test and considered statistically different if $p < 0.05$.

Results: Independent of the sex, none differences were observed between prepubertal control and restricted offspring about the performance on maximal effort ergometer test.

Conclusion: It is possible that the impact of maternal malnutrition during lactation on cardiorespiratory activity of male and female descendants depends on sexual maturation and aging.

Key words: Exercise test; Malnutrition; Cardiovascular diseases.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP15. MUSCARINIC ACETYLCHOLINE RECEPTOR ANTAGONISTS MODULATE THE CLUSTERIN SECRETION IN THE RAT EPIDIDYMIS

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Introduction: Previous studies from our laboratory demonstrated the expression of M₁, M₂ and M₃ muscarinic receptor subtypes (mAChR) in the rat epididymis, but their functions have not been elucidated. The autonomic neurotransmitters may be involved in various functions of the male reproductive tract, including protein secretion. An abundant protein secreted in the epididymis and important for sperm maturation is the clusterin. **Objective:** The aim of this study is to evaluate the effect of cholinergic antagonists on the secretion of clusterin in the rat epididymis. **Methods:** Male Wistar rats were divided in four groups that receiving 200 µl (i.v.) containing Ringer's solution (control), 10 µg of carbachol, 480 µg of atropine, 120 µg of methoctramine or 1200 µg of pF-HHSiD. After treatments, immunoperoxidase staining of epididymis sections were carried out using mouse monoclonal antibodies anti-rat clusterin 6E9 (1:20). **Results:** In the proximal cauda epididymis, atropine induced an increase in the staining at the apical region and stereocilia, when compared to the control. The methoctramine showed a similar pattern, but more intensive than the atropine and showed contracted epididymal tubule. The pF-HHSiD did not change the immunostaining of clusterin in this region, but an increase in tubular diameter was observed with this antagonist. **Conclusion:** Our preliminary data suggesting the involvement of mAChRs in the modulation of secretion and/or the regulation of clusterin expression in this tissue and, consequently, in the male gamete maturation.

Key words: Muscarinic receptor; Clusterin; Epididymis.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP16. EFFECTS OF THE ANTIATHEROGENIC DRUGS LASSBio-788 AND SIMVASTATIN ON MALE REPRODUCTIVE TRACT

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Introduction: LASSBio-788, a thienylacylhydrazone derivative, has an antiatherogenic effect with antiplatelet, anti-inflammatory, vasodilatory, antioxidant and lipidic lowering properties. Therefore, it is important to evaluate the toxic effects caused by this potential candidate to drug for atherosclerosis treatment. **Objective:** The aim of this study is to evaluate possible toxic effects of LASSBio-788 on the male reproductive tract in rats, comparing to simvastatin, a well-established antiatherogenic drug. **Methods:** Male Wistar adult rats (180-200g) were separated in four groups (n=6/group): CO-fed with standard chow; HC-fed with hypercholesterolemic diet for 45 days; HC+788-fed with hypercholesterolemic diet and treated with LASSBio-788 (100 µmol/kg i.p.) for 15 days, HC+SINVA-fed with hypercholesterolemic diet and treated with simvastatin (10 mg/kg gavage) for 15 days. The animals were anesthetized, testes and epididymis were removed, weighed and processed for morphometric analyze and spermatoc evaluation. Statistical analysis was done by one-way ANOVA followed by the Newman-Keuls test, $P < 0.05$. **Results:** Tubular diameter and seminiferous epithelium hight were different among the groups. Spermatogonia and spermatocytes count was lower in both treated groups, but round spermatid number and Sertoli cell count were lower only in HC+SINVA group. In sperm evaluation, LASSBio-788 and simvastatin were able to partially recover the deleterious effect of hypercholesterolemia on the male gamete. **Conclusion:** LASSBio-788, a potential antiatherogenic drug candidate, did not show significant toxic effects on the testis and male gamete. It partially recovers hypercholesterolemia effects, being as safe as statins or better than them, regarding the male reproductive tract.

Key words: Toxicology; Antidyslipidemic drug; Male reproductive tract.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP17. MODULATORY EFFECTS OF OUABAIN ON B AND T LYMPHOCYTES IN MURINE MELANOMA MODEL

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Introduction: Ouabain (OUA) is a cardiotonic glycoside discovered in roots of *Acocanthera ouabaio*, an African plant. OUA was also described as endogenous component of superior mammals. It is released in stress conditions similar to glucocorticoid secretion. In addition, OUA has modulatory effects in immune system and tumors. Our group observed that OUA was able to reduce regulatory T cells. Thus, the objective of this study was to show the effects of OUA in B and T lymphocytes modulation in a murine melanoma model (B16F10). **Methods:** C57BL/6 mice were injected intraperitoneally with 0.56mg/kg OUA for three consecutive days. The injection occurred from the 1st to the 3rd day before the injection of 10⁶ melanoma cells. The animals were euthanized on the 4th, 11th and 21st days and the spleen and mesenteric lymph nodes removed for analysis of B and T lymphocytes by flow cytometry. **Results:** *In vivo* treatment with OUA reduced the percentage and absolute number of regulatory T cells (CD4+ Foxp3+) in the spleen of animals. There was a tendency to increase the ratio of CD8+/CD4+Foxp3+ T cells in the spleen of melanoma injected mice previously treated with OUA. Ouabain was also able to preserve the absolute number and percentage of B lymphocytes in the mesenteric lymph nodes of treated animals, decreasing the number of apoptotic cells in this organ. **Conclusion:** Therefore, ouabain has a promising anti-tumor effect by reducing the number of regulatory T cells that suppress the tumor response.

Key words: Immunoregulation; B Lymphocytes; T Lymphocytes; Ouabain.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP18. PHARMACOLOGICAL EVALUATION OF INOSINE IN VASCULAR REACTIVITY OF HYPERCHOLESTEROLEMIC RATS

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Introduction: Atherosclerosis is a multifactorial chronic disease, probably initiated by an endothelial dysfunction. Adenosine and its analogs, such as inosine, can change a variety of inflammatory diseases and has shown important effects at different models. **Objective:** The present study aims to evaluate the pharmacological properties of inosine, analogous of adenosine, administered sub-chronically in a hypercholesterolemic model. **Methods:** Adult male Wistar rats (200-250g) were divided into three groups (n=8 each group): control group (C) fed standard diet, hypercholesterolemic group (HC) and hypercholesterolemic + inosine (HC+INO). At 31^o diet day, was performed the sub chronic treatment with inosine (10mg/kg/orally) once daily, totalizing 15 days. The animals were euthanized under ketamine and xylazine anesthesia. Thoracic aortas were excised for vascular reactivity assay. Data were analyzed using one-way ANOVA, P<0.05. **Results:** The group with the hypercholesterolemic diet presented a decrease in the maximum relaxation (83.02±4.07), produced by acetylcholine, when compared to control (89.17%±1.36); inosine treatment promoted an increase in relaxation compared to HC group (98.23% ± 2.21). In the contractile response promoted by phenylephrine, the HC group (-LogCE50: 7.31±0.17) presented an increase when compared to control (-LOGCE50: 6.79±0.07), while the treatment with inosine (-LogCE50: 6.07±0.05) was capable to reduce this. **Conclusion:** This study demonstrated the ability of the hypercholesterolemic diet to alter endothelial function, contributing to the development of atherosclerosis. We also showed that inosine was able to reverse these effects. Our results indicate inosine as a potential drug for the treatment of cardiovascular disorders, such as atherosclerosis.

Key words: Atherosclerosis; Inosine; Treatment.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP19. IMPACT OF EXERCISE TRAINING AND ENALAPRIL ON WHITE ADIPOSE TISSUE RENIN-ANGIOTENSIN SYSTEM IN A DIET-INDUCED OBESITY MODEL

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Introduction: The renin–angiotensin system (RAS) has emerged as a regulator of metabolic homeostasis and exercise training (ExT) causes changes in this RAS.

Objective: To evaluate the effects of ExT and enalapril on white adipose tissue (WAT) RAS in an obesity model. **Methods:** C57BL/6 mice were fed either standard chow (SC) or high-fat (HF) diets for 16 weeks. After 8 weeks, HF-fed animals were divided (n=8): HF, HF+Enalapril (HF-E), HF+training (HF-T) and HF+Enalapril+training (HF-ET) groups. We assessed body composition by DEXA, systolic blood pressure (SBP), irisin and inflammatory profile, WAT histology and RAS components by HPLC. **Results:** In comparison to SC animals, body mass significantly increased in HF animals, but not in those subjected to HF-E and HF-T. SBP, adipocyte hypertrophy, adiposity index, and body fat percentage were all elevated in HF compared to SC mice; the interventions prevented these elevations. IL-6 and TNF- α were significantly elevated by HF diet, and all interventions reduced it. Plasma irisin was increased only in HF-T. WAT Ang II concentration was higher in HF than SC group and all interventions reduced it. The Ang II/Ang 1-7 ratio in HF-E and HF-T was similar to that of SC mice whereas the ratio in HF-ET was lower than those of the SC and HF groups. **Conclusion:** The results suggest that enalapril combined with ExT has better results than either treatment alone in reducing adiposity and shifting the balance of RAS in WAT. These results suggest that targeting WAT RAS could be a new therapeutic approach to treat obesity-related dysfunctional metabolic. **Key words:** Renin–angiotensin system (RAS); Exercise training (ExT); White adipose tissue (WAT).

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP21. STUDY OF CINNAMALDEHYDE AS A STRATEGY FOR THE TREATMENT OF EARLY OBESITY AND COMORBIDITIES

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Introduction: Child obesity is considered a serious public health problem in the world and is associated with the development of cardiometabolic diseases in adult life. Fat accumulation compromises cellular homeostasis in several tissues. In the liver, endoplasmic reticulum stress (ERS) causes alteration in lipid metabolism and insulin signaling and contribute to dyslipidemia and insulin resistance. Cinnamaldehyde is the main bioactive component of cinnamon oil and has antidiabetogenic and lipid-lowering effects. **Objective:** Analyze if cinnamaldehyde can revert early obesity, comorbidities and modulate ERS in the liver. **Methods:** Early obesity was induced by superlactation (male Wistar rats). Control litters (CT; n=9) were kept with 10 pups per dam, and in the superlactation group (SL; n=18) the litter number was reduced to 3 animals per dam. At 30 days of age (puberty), the treatment with cinnamaldehyde was initiated (400mg/kg/day, gavage) in 9 SL animals (SLC) for 30 days. Insulinemia and lipid profile were evaluated by radioimmunoassay and colorimetric assay, respectively. In the liver, the eIF2 α expression (ERS marker) was analyzed by western blot and SREBP1c mRNA expression by qPCR. Statistic differences were considered when $p \leq 0.05$. **Results:** Cinnamaldehyde treatment attenuated visceral fat mass gain, reduced serum insulin, and triacylglycerol when compared to SL group. In the liver, phosphorylated eIF2 α levels and SREBP1c mRNA expression were lower in SLC group vs SL. **Conclusion:** Cinnamaldehyde may be an adjunct in the treatment of early obesity. The improvement in hepatocyte homeostasis through reduction of ERS may contribute to lower hepatic lipogenesis and insulin sensitivity.

Key words: Early obesity; Cinnamaldehyde; Reticulum stress.

PÔSTER - POSTER

AREA: RESEARCH IN PHARMACOLOGY AND PHYSIOLOGY

PP22. THE IMPACT OF NEGATIVE STIMULI ON MOTOR ACTIVITY OF URBAN VIOLENCE VICTIMS: AN ELECTROPHYSIOLOGICAL STUDY

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Introduction: The study of human defensive motor reactions under threat is important to the understanding of Posttraumatic Stress Disorder (PTSD) vulnerability.

Objective: We explored if pictures of mutilated human bodies (a cue for potential threat) would prompt differential motor reactions in students who have experienced traumatic events, based on the severity of PTSD symptoms.

Methods: Forty-two participants judged the orientation of two peripheral bars, indicating whether their orientation was the same, while ignoring a central picture (mutilated or intact bodies) presented by 200 ms. PTSD symptoms severity was assessed using the PTSD checklist (PCL).

Results: We found a U-shaped relationship between PTSD symptom severity and LRP latency during the potential threat condition but not during the control. Under potential threat, participants with moderate PTSD symptoms required less time for reaction readiness than participants with minor and severe PTSD symptoms, reflecting a delayed motor preparatory activity in the latter two.

Conclusion: These results suggest that PTSD symptom severity would modulate the interaction between threat perception and motor reactions. As severity increases, more intense activations of the defensive behaviours are expected, possibly varying from attentive immobility to tonic immobility.

Key words: Posttraumatic Stress Disorder (PTSD); Lateralized Readiness Potential (LRP); Motor Preparatory Activity.

PÔSTER - POSTER

AREA: TEACHING

TE02. IDENTIFICATION OF *RHIZOPUS* SP. ON TEETH BRUSH FOR CANINE

USE: AN ALERT!

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Introduction: In the Teaching Project "Mycology around", we encourage students to collect materials from several sources, growing them in tubes with the routine Sabouraud culture medium. In this report, a toothbrush, not canine-specific, was being maintained, before and after brushing the dog-teeth, in a laundry tank, consisting of an open area, with high humidity, a perfect environment for fungal contamination. **Objective:** To stimulate the observation, studies and animal-care. Identification of fungi present in materials used in daily life, which could be fungal carriers with potential to cause disease. **Methods:** Toothbrush bristles were inoculated into tubes with solid Sabouraud culture medium tilted for 7 days. After this time, fungal colonies were evaluated by light microscopy. **Results:** Collected bristles, without any apparent contaminations, when introduced in Sabouraud medium, evidenced an exuberant fungal growth, easily spotted by microscopy as *Rhizopus* sp. **Conclusion:** In all instances, the brushing of pet-teeth should be guided by veterinarians, using appropriate brushes and antiseptics. Mucormycosis is a neglected opportunistic mycosis, whose rhinocerebral is its most severe form, occurring in humans and other animals. This disease is generally acquired by inhalation of spores, but also by traumatic inoculation, which has been already described in humans after tooth extraction. In our report, the presence of one of the main agents of this mycosis, *Rhizopus* sp., has suggested that the brushing procedure, mainly for the purpose of cleaning and removing the tartar, could cause the infection, since the fungus is present in this material.

Key words: Mycology; *Rhizopus* sp.; Mucormycosis.

PÔSTER - POSTER

AREA: TEACHING

TE03. BACTERIOLOGY PROFILES GUESSING GAME: A TOOL FOR HELPING THE LEARNING EXPERIENCE OF VETERINARY BACTERIOLOGY

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Introduction: Currently, the teaching method used is usually linked to lectures where the content is presented to the student in the form of concepts and definitions. This approach could lead to loss of interest by the student that only passes through a momentary process of memorization, and not for productive and quality learning process. The search for new ways of transmitting knowledge that lead to the student's awareness of the content taught is the main concern observed. It is in this context that the playful and didactic game gains space as a motivating tool for the learning of new knowledge. **Objective:** To carry out activities with the use of a board game in the classroom to encourage the acquisition of concepts of veterinary bacteriology in a fun and efficient way. **Methods:** The project, developed at the Federal Fluminense University in 2017, consisted in the application of successive rounds Bacteriology Profiles. The game was developed containing 34 houses, 10 pins and 40 cards with 10 tips each. The cards were divided into 4 categories: Antimicrobials, Bacterial Genus, Cell Components and "Others". **Results:** After applying all the rounds of the game, we got a positive response from the students. Most of them evaluated the game in a positive way, claiming it has facilitated the fixation of the content as well as the teaching-learning dynamics of the contents of the discipline of Bacteriology for the veterinary course. **Conclusion:** The application of educational games is an efficient way of teaching subjects of Biology.

Key words: Biology Teaching; Educational games; Bacteriology.

PÔSTER - POSTER

AREA: TEACHING

TE04. SUSTAINABILITY AND VERSATILITY IN BIOMEDICINE: NEW FORMS OF ENVIRONMENTAL EDUCATION

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Introduction: Problematization is a necessary condition to trigger cognitive reflections, challenging the human being to investigate, think and, then, create ideas and organize the knowledge. Thus, we need to formulate problems to the questions we do not know, as well as recognize initial errors from the first experience. Environmental Education for Biomedicine is a discipline that intends to generate a great interest in students to act within a concept of sustainable development, improving the way of life and professional acting. **Objective:** In this context, this project aims to make students act as learning agents through a Problem-based Learning (PBL) approach, working sustainable proposals directed to both inner and outer audiences, exposing and opening discussions about a variety of themes around sustainability. **Methods:** In each semester, the students develop distinct projects on different themes, avoiding possible copies or recreations. Based on a few exposing classes, they are instructed to work on different ways, according to their ability, focusing on environmental education. **Results:** We have observed that students are more and more participative and, mainly, involved with the sustainability thematic. They have been developing extension projects that give continuity to the thoughts built in the classroom. **Conclusion:** The exchange of experiences in the field of problematization contributes to the construction of a broad and coherent thought on this subject. This is in accordance with the premise of the Ministry of Education and Culture to reduce class time and increase the active search.

Key words: Problem-based learning; Problematization; Environmental education; Biomedicine.

PÔSTER - POSTER

AREA: TEACHING

TE05. CONCEPT MAPS AS A STRATEGY FOR THE TEACHING OF HUMAN PHYSIOLOGY IN THE GRADUATION: EXPERIENCE REPORT

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Introduction: The innovation in higher education has been discussed as a way to change the traditional teaching, stimulating the insertion of new pedagogical methods that are in agreement with different learning styles. Concept Maps allow the student to establish interrelation between the knowledge already acquired joins the new one creating innovative learning cycles. **Objective:** To develop a teaching method for human physiology that allows nursing students to participate actively in their own learning, as well as the creation of an online teaching tool to share the contents produced. **Methods:** It was based on the methodology of concept maps for the Physiology students of the UFF Nursing course. In each study module, the students were instructed to make concept maps of the contents to be taught, and the delivery was scheduled. The maps were collected for correction and note assignment. The maps developed were digitized, grouped into key concepts and subdivided in areas. A website was created to make this material available. **Results:** The website created has more than 300 concept maps that can be expanded and contextualized with other disciplines. For the evaluation of the project, an anonymous opinion survey composed of objective questions was applied. Of the 44 students who participated, 75% reported maximum satisfaction with the concept maps. **Conclusion:** The inclusion of teaching methodologies that contemplate the creative potential of the students allied with technological resources, has a positive impact on the university environment, as they allow the academic an active role in the construction of their own knowledge.

Key words: Physiology; Concept Maps; Higher Education.