20-22 de Fevereiro 2020

XII Jornadas de Genética e Biotecnologia
II Jornadas Ibéricas de Genética y Biotecnología

Universidade de Trás-os-Montes e Alto Douro

Book of Abstracts

ADNGB
Núcleo de Alunos de Genética e Biotecnologia da AAUTAD

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XII Genetics and Biotechnology Conference/ II Genetics and Biotechnology Iberian Conference

The Genetics and Biotechnology Conference (JGB) of the University of Tras-os-Montes and Alto Douro (UTAD) is an annual scientific event organized jointly by the Nucleus of Students of Genetics and Biotechnology (ADNGB) of UTAD and the Direction of the Course of Genetics and Biotechnology in collaboration with the teaching staff of the Department of Genetics and Biotechnology (DGB). As a result of the scientific-pedagogical partnership established between professors of DGB (UTAD) and of Faculty of Biological and Environmental Sciences of the University of León (UL), Spain, it was considered important to repeat the shared organization of this event between professors and students of the UTAD and UL designating it as XII Genetics and Biotechnology Conference / II Genetics and Biotechnology Iberian Conference (XII JGB / II JIGB). The main objective of the XII JGB /II JIGB is to update knowledge in the area of Genetics and Biotechnology. To this end, the focus of this event is the conferences given by renowned national and international scientists and the thematic workshops that will constitute more practical sessions. The XII JGB /II JIGB will also focus on interaction, exchange of experiences and scientific debates between Portuguese and Spanish students and professors. The best oral and posters presentations will be awarded. The target audience is Portuguese and Spanish students, researchers and university professors from the scientific areas of Biological Sciences and Biotechnology as well as High School teachers from the Biology area. A wide variety of topics will be discussed, in the different areas of Genetics and Biotechnology, such as Plant, Animal, Human, Microbial, Evolutionary, Cancer, Forensic, Ethics, Entrepreneurship, among others.

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Professor Penélope García Angulo

Students and members of ABLE:

Luis Getino Alonso
Juan José Vindal Núñes

Program

Thursday 20th February- UTAD

14.30-17.30 h: Workshops

Eurico Lima, Lucinda Vaz Reis - *How to extract, isolate and identify plant-based secondary metabolites with biotechnological and pharmacological relevance?*

Manuela Matos, Marlene Santo, Ana Sofia Soares, Ana Cláudia Coelho - *Molecular Genetics – Genotype vs Phenotype*

Irene Oliveira, Eduardo Pires - *Introduction to Phyton and R programming for applications in Bioinformatics*

Jorge Azevedo - *The history of silkworm production and new technologies*

Carlos Viegas, João Requicha - *Clinical genomics of the periodontal disease*

Friday 21st February- Aula Magna UTAD

8.30-9.30 h: Registration

9.30-10.00 h: Opening Session

10.00-11.00 h: Conference

Nelson Saibo, Professor
ITQB, Lisbon

New insights into different regulatory networks controlling both plant responses to environmental cues and C4 photosynthesis

11.00-11.15 h: Coffee break

11.15-12.00 h: Conference

David Caparrós Ruiz, Professor
Universitat Autònonma de Barcelona, Spain

The role of O-methyltransferases in lignin biosynthesis in maize

12.00-13.00 h: Oral Communications

Balboa Álvaro J. - *Changes in gene expression in lentil subjected to drought stress*

Santos M. - *Foliar application of magnesium and potassium as mitigation strategy of sweet cherry cracking: effects on fruit quality and gene expression*

Santos R. - *How close are Portuguese and African cowpea accessions? An evaluation by SSR markers*

Machado M. T. - *Multivariate data analysis of morphological characterization data in Portuguese maize landrace accessions*

Vázquez A. - *Recycling of citric wastes to obtain products with commercial value*

14.30-15.30 h: Conference

Luísa Vasconcelos, PhD
Instituto Gulbenkian de Ciência, Lisbon

The study of innate behavior using the fruit fly

15.30-16.15 h: Conference

Carmen Marin, Professor
Universidad de Léon, Spain

A newly described function of the TP73 tumour suppressor gene as an architect of epithelial tissue

16.15-16.30 h: Coffee break

16.30-17.00 h: Poster Session

17.00-18.00 h: Oral Communications

Canedo-Ribeiro C. - *Preimplantation genetic testing for aneuploidy (PGT-A) as a useful tool in cattle breeding programmes*

Barros S. - *Simvastatin disrupts zebrafish (Danio rerio) lipid and energy metabolism after long-term exposure*

Bezerra M. - *Dalbavancin as a therapeutic option to treat human osteomyelitis caused by methicillin-resistant Staphylococcus aureus (MRSA) infection*

Soares A.S. - *Indoors Fungal biodiversity - Penicillium and Alternaria*

Meireles D. - *Listeria monocytogenes wall teichoic acid glycosylation promotes surface anchoring of virulence factors, resistance to antimicrobial peptides and susceptibility to antibiotics*

18.00-18.30 h: Round Table with Former Students
(exclusive event for former and current students of 1st, 2nd and 3rd cycles in the field of Genetics and Biotechnology)

20.30 h: Formal Dinner

Saturday 22nd February- Aula Magna UTAD

9.30-10.30 h: Conference

Patrícia Monteiro, Professor
Universidade do Minho

Genetics models of Autism Spectrum Disorders (ASD): the Shank3 gene

10.30-11.15 h: Conference

Olga Amaral, PhD
INSA, Porto

Novel tools in cell and molecular biology: induced pluripotent stem cells in the field of lysosomal storage disorders

11.15-11.30 h: Coffee break

11.30-12.00 h: Conference

Joaquim Sá, Dr.
CGC Genetics / Centro de Genética Clínica, Unilabs, Porto

The usefulness of medical genetics in real clinical practice

12.00-13.00 h: Oral Communications

Lino A. - *qPCR assay for Colletotrichum acutatum detection and quantification*

Silva-Reis R. - *Morphometric analysis of rat parameters during an animal model of colorectal cancer*

Ribeiro I. - *Identification of transcription factors associated with a cancer stem cell phenotype in colon cancer cells*

Lucas D. - *FA-SAT ncRNA depletion induces apoptosis – is it through p53 mediation?*

Lopes M. - *SatDNA involvement in rob(14;21) formation: Assessing the robustness of technique interdependency*

14.30-15.30 h: Conference

Joana Azeredo, Professor
Universidade do Minho

The biotechnological potential of bacteriophages to control infectious diseases

15.30-16.15 h: Conference

Agostinho Antunes, Professor
Universidade do Porto

Understanding Adaptation with Genomics and Bioinformatics: Biotechnological Relevance

16.15-16.30 h: Coffee break

16.30-17.00 h: Musical moment

17.00-17.30 h: Award Ceremony and Closing Session

Detection of *Francisella* spp. in wild animal lymph nodes and lungs by PCR and histopathological techniques

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Keywords: *Francisella* spp.; wild animals; PCR; histopathology

Among the emerging infectious diseases, of zoonotic origin, tularemia, or rabbit fever, requires special attention. The disease is caused by various strains of *Francisella tularensis*, a bacterium used as a biological weapon since antiquity, and belonging to the group of high danger in terms of infectiousness, along with agents such as *Bacillus anthracis* and *Yersinia pestis*. The most frequent manifestation of this disease involves symptoms that include fever, myalgia, dyspnoea and cough, among others. In addition to the unspecified clinical picture, its largely unknown natural occurrence and the high number of known reservoirs and vectors, are factors that reinforce the need for epidemiological studies in these groups of animals. In this study, a screening of *Francisella* spp. was performed on 130 tissues of 79 wild animals from Beira Interior Sul de Portugal, using the polymerase chain reaction (PCR) and histopathology techniques. The results pointed to potential cases of infection by this bacterium in 20 of the animals analysed (25.3%) and in 18 of the studied tissues (13.8%). In both screenings, the organs most affected were the mesenteric lymph nodes and lungs. In conclusion, this study demonstrated the presence of the potential agent of tularemia in economically important species, which may pose a risk to public health in terms of contaminated products. Finally, the locations of occurrence provide a higher risk of incubation of the agent for future zoonotic outbreaks.