



COETox

International Conference of Environmental and Occupational Health

ABSTRACT BOOK



iBAMTOX
Ibero-American Meeting on Toxicology and Environmental Health

2016

21-23 June | Porto



FOREWARD



On behalf of the Organising Committee, I would like to cordially welcome you to the *3rd International Conference on Occupational & Environmental Toxicology* (ICOETox 2016), which is held in Porto in conjunction with the *3rd Ibero-American Meeting on Toxicology and Environmental Health International* (IBAMTOX 2016).

This conference is co-organised by the Portuguese National Institute of Health (INSA), the Institute of Public Health- Universidade do Porto (ISPUP) and the Instituto de Ciências, Tecnologias e Agroambiente da Universidade do Porto (ICETA-UP).

The Organising Committee was successful in inviting a number of outstanding international and local speakers in order to offer you a very attractive scientific programme. The Conference covers most of the current topics of Environmental and Occupational Toxicology; we have tried to achieve a good balance between research and practice and to allow sufficient time for interaction and discussion. This meeting provides a good opportunity for divulging one's work and discussing a great variety of topics that we hope will be reflected in a fruitful interchange of experiences, knowledge and ideas. It is also a chance for renewing old contacts and making many new friends.

The city of Porto, known as *Invicta* (unvanquished) City, has an important historical legacy, although architectural images show its urban renovation process giving valuable testimony of its history and modernity. Indeed, Porto historical centre was designated World Cultural Heritage in 1996 due to the many historical buildings and urban mesh. Porto is divided between the river Douro and the Atlantic Ocean, and boasts of poetic sunsets where the eyes absorb and the soul savours. Downtown is located the busiest commercial area, where typical products are found alongside prestigious designer brands. It is also worth highlighting the world famous Porto Wine, produced exclusively in the Douro Demarcated Region and aged in cellars. And finally, our visitors should not forget to try our local cuisine, as Porto has gone beyond tradition in order to reach the best international standards.

I would like to express my sincere thanks to our collaborating institutions and all those organisations and companies which put their trust in this project and provided sponsorship for the meeting; without their effort, support and collaboration this Conference would not have been possible.

I hope that, despite the tight scientific programme, you will find some time to enjoy our landscapes, typical food, and kind people, and that this meeting will meet all your expectations from the scientific and social points of view. I wish you a productive Conference and a pleasant stay in Porto. Thank you for being here.

Bem-vindos ao Porto!



(João Paulo Teixeira)

ICOETox 2016 | IBAMTOX 2016 Scientific Committee



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P38.**UNVEILING THE REASON WHY FRESHWATER HETEROTHOPHIC BACTERIA ARE NO AFFECTED BY MICROCYSTINS: ANTIOXIDANT SYSTEM VS. DEGRADATION**

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Microcystins are the class of hepatotoxins most commonly produced by cyanobacteria. These are found in aquatic ecosystems where they coexist with other microorganisms such as *Aeromonas hydrophila* and *Flavobacterium sp.* There are already a fair amount of studies on the effect of microcystins in eukaryotic organisms, but there are only a few studies about the effects of these toxins in microorganisms. The scarce existing studies show that microcystins can cause a decrease of the microbial growth, even though not being fully inhibited by it [1]. In this study the aim is to determine the reason why aquatic heterobacteria are not very affected by the presence of microcystins in their growth medium. Therefore, the activity of some enzymes of the antioxidant system was evaluated and the presence of genes responsible for microcystin degradation (*mlrA-D*) was assessed in isolates recovered from freshwaters where microcystins are commonly found. These results were compared with the pre-existing bases on the literature to evaluate the relevance of the presence or absence of the genes responsible for microcystin degradation with the natural resistance found in heterobacteria from aquatic environments. Moreover, the activity of the enzymes from the antioxidant system also was accounted to explain this behavior.

[1] D. Miguéns & E. Valério, *Limnetica* **34**, 215-226 (2015)