

PTIM'19

POLLUTANT TOXIC IONS & MOLECULES

BOOK OF ABSTRACTS

3rd International Caparica
Conference on Pollutant
Toxic Ions & Molecules 2019

4th - 7th November 2019
Caparica, Portugal



PROTEOMASS
scientific society | www.proteomass.org

www.bioscopegroup.org
BIOSCOPE
in the forefront of science

3RD INTERNATIONAL CAPARICA CONFERENCE ON POLLUTANT TOXIC IONS & MOLECULES 2019

ISBN: 978-989-54470-3-9

Author: Carlos Lodeiro

Co-author(s): José Luís Capelo; Elisabete Oliveira ; Javier Fernández Lodeiro; Hugo Miguel Santos; Adrián Fernández Lodeiro; Cristian Cuerva

Printed by: Proteomass Scientific Society (Portugal)

Printage: 25 Copies

Electronic support: 200 PDF/ PDF/A

Design: Sara Oliveira

Caparica - Portugal, 2019

Endocrine Disrupting Chemicals in Patients with Chronic Obstructive Pulmonary Diseases

Ana C. A. Sousa^{1,2,3}, Sara Souto-Miranda⁴, Alda Marques⁴, Carla Valente⁵, Rafael Barros²,
Luís Taborda-Barata^{2,3}, Rumi Tanoue⁶, Tatsuya Kunisue⁶, Shinsuke Tanabe⁶,
M. Ramiro Pastorinho^{2,3,7}

¹CICECO-Aveiro Institute of Materials, Department of Chemistry, University of Aveiro, Portugal

²CICS-UBI - Health Sciences Research Centre, University of Beira Interior, Covilhã, Portugal

³NuESA-Health and Environment Study Unit, Faculty of Health Sciences, University of Beira Interior, Covilhã, Portugal

⁴Lab 3R / Respiratory Research Rehabilitation Laboratory and Institute of Biomedicine (iBiMED),
University of Aveiro, Aveiro, Portugal

⁵Centro Hospitalar do Baixo Vouga, EPE, Aveiro, Portugal

⁶CMES, Ehime University, Matsuyama, Japan

⁷Department of Biology, University of Évora, 7002-554 Évora, Portugal

*email: anasousa@ua.pt

The study of indoor environmental quality as well as the development and progression of chronic respiratory diseases have received a great deal of attention in the past few years. However, most of those surveys focus on the effects of particulate matter (PM) and biological contaminants (fungi and bacteria) and evidences on the effects of endocrine disrupting chemicals (EDCs) in these pathologies are limited. Hence, RESPIRA project aims to contribute towards a better understanding of the role of multiple stressors in respiratory diseases by providing data on the levels and effects of EDCs in patients with Chronic Obstructive Pulmonary Disease (COPD) and control individuals from Estarreja region (NW Portugal). Here we will summarize the results obtained for phenolic compounds (parabens, triclosan and triclocarban) in matched human and indoor environmental samples (house dust) from COPD patients. Overall, the concentrations in dust samples are one to two orders of magnitude higher than the concentrations in human urine. Triclosan was detected in all the dust samples, triclocarban was detected in 82% of the dust samples and parabens in 90% to 100% of the samples. In urine samples, triclosan was detected in 56% of the samples, triclocarban was always below detection limit (0.25 ng/mL) and parabens detection frequency varied widely (23-84%). Interestingly, the highest level reported in dust for triclosan (1200 ng/g) corresponded to the house of the patient with the highest triclosan concentration in urine (140 ng/mL).

Acknowledgements:

This work was financed by Labex DRIIHM (PIA), via OHMI Estarreja – International Observatory Hommes-Millieux, tool of CNRS/INEE - National Center for Scientific Research/Institute of Ecology and Environment and Labex DRIIHM, French programme "Investissements d'Avenir" (ANR-11-LABX-0010) which is managed by the ANR. Further financial support was provided by the Ministry of Education, Culture, Sports, Science, and Technology, Japan (MEXT) to the LaMer project. Further funding was provided by Universidade de Aveiro, in the scope of the framework contract foreseen in the numbers 4, 5 and 6 of the article 23, of the Decree-Law 57/2016, of August 29, changed by Law 57/2017, of July 19 (A.C.A. Sousa).