

# 5<sup>th</sup> International Conference on **Pollution Control and Sustainable Environment** &

# 10<sup>th</sup> Edition of International Conference on **Water: Pollution, Treatment & Research**

March 14-16, 2019 London, UK

## Effect of endocrine disruptors 4-MBC and DES pollutants on *P. tricornutum*

Jorge Paulo<sup>1</sup>, César Cunha<sup>1</sup>, Marisa Faria<sup>1</sup>, Manfred Kaufmann<sup>2,3</sup> and Nereida Cordeiro<sup>1,3</sup><sup>1,2</sup>University of Madeira, Portugal<sup>3</sup>University of Porto, Portugal

Diethylstilbestrol (DES) and 4-methylbenzylidene camphor (4-MBC) are classified as estrogen pollutants. These components have been widely found in marine environments. These contaminants are endocrine disruptors that have the potential to affect microorganisms. In the current investigation, the marine microalga *Phaeodactylum tricornutum* was exposed to environmental relevant concentrations (1, 100 and 250 µg L<sup>-1</sup>), individually and together, of DES and 4-MBC. *Phaeodactylum tricornutum* growth and the production of photosynthetic pigments, proteins and carbohydrates was assessed as endpoints of the pollutants trace concentrations toxic effects. Regarding growth inhibition, there was a significant decrease in the first 48-72h of the experiment for both pollutants. No significant decrease was observed for the production of photosynthetic pigments and proteins across all concentrations and pollutants. Extracellular carbohydrates production was down-regulated in the presence of both pollutants in all concentrations tested. The results on this work highlight the effects of realistic concentrations of widely found estrogen pollutants on the biological processes of microalgae.

### Biography

Jorge Paulo has completed his undergraduate degree in Biochemistry last summer in University of Madeira (UMa). He started a professional internship in CIIMAR-Madeira, working as a Junior Researcher in LB3 (Laboratory of Bioanalysis, Biomaterials and Biotechnology) and in Madeira Algae Bank at University of Madeira.

jorge.paulo@staff.uma.pt

### Notes: