MICRO BIOTEC 19

CONGRESS OF **MICROBIOLOGY** AND **BIOTECHNOLOGY 2019**

December 5th-7th, 2019
University of Coimbra (Pólo II)

BOOK OF ABSTRACTS

SPM
Sociedade Portuguesa de Microbiologia

spbt
sociedade portuguesa de biotecnologia

1 2 9 0
UNIVERSIDADE D COIMBRA

I1. Environmental Microbiology and Biotechnology

P69. *Labrys portucalensis* F11 efficiently degrades Di-(2-ethylhexyl) Phthalate

Irina S. Moreira, Rafael D.C. Duarte, Rafaela A.F. Geraldo and Paula M.L. Castro
Universidade Católica Portuguesa, CBQF - Centro de Biotecnologia e Química Fina – Laboratório Associado, Escola Superior de Biotecnologia, Porto, Portugal

E-mail: *ismoreira@porto.ucp.pt*

Phthalates, such as Di-(2-ethylhexyl) Phthalate (DEHP), are compounds extensively used as plasticizer. Due to the extensive usage, DEHP is found in many wastewaters, surface waters and soil. DEHP is persistent in the environment and the toxicity of the byproducts resulting from the degradation of DEHP sometimes exacerbates the parent compound toxicity. They are now becoming contaminants of emerging concern, considered as potential environmental endocrine disruptors, included in priority list of European Union water directive. The bacterial strain *Labrys portucalensis* F11 has shown to be able to degrade DEHP supplied as sole carbon source. Total degradation was achieved for concentrations up to 10 ppm. For 50 ppm, 60% of the compound was degraded in 30 days, with concomitant bacterial growth. The bacterial strain was also able to completely degrade Mono-(2-ethylhexyl) Phthalate (MEHP) and Phthalic acid (PA), which are considered as possible intermediates of DEHP degradation. Whole sample toxicity after degradation of the compound was reduced assessed through the inhibition of germination and growth of tomato and lettuce. Elucidation of the metabolic pathway of degradation is ongoing.

Acknowledgements
This work was supported by National Funds from FCT - Fundação para a Ciência e a Tecnologia - through the project AGeNT - PTDC/BTA-BTA/ 31264/2017 (POCI-01-0145-FEDER-031264). We would also like to thank the scientific collaboration of CBQF under the FCT project UID/Multi/50016/2019.