

Sea bass (*Dicentrarchus labrax*) - a model organism for the screening of estrogenic chemicals in marine surface waters?

AD Correia¹, S Freitas¹, MH Lamoree², P Booij², M Scholze³, E Mañanós⁴, MA Reis-Henriques⁵

¹CIIMAR-Centro Interdisciplinar de Investigação Marinha e Ambiental, Porto, Portugal.

²IVM Institute for Environmental Studies, Amsterdam, The Netherlands

³The School of Pharmacy, London, United Kingdom

⁴Instituto de Acuicultura de Torre de la Sal, Ribera de Cabanes, Spain.

⁵ICBAS- Instituto de Ciências Biomédicas de Abel Salazar, Porto, Portugal

There is growing concern that aquatic wildlife in surface waters of the European Union is exposed to natural and man-made chemicals that have the ability to mimic estrogens and lead to reproductive dysfunction. Estrogenic responses in fish are the net result of complex chains of events involving the uptake, distribution and metabolism of test agents until they interact with their target sites. Typically these aspects cannot be modelled in short-term cell-based assays, only studies with vertebrates offer the opportunity to assess potential interactions of test compounds at higher organisational levels. However, studies with endocrine disrupting chemicals have been performed mainly with freshwater organisms. The sensitivity of a marine fish species to different estrogenic chemicals was investigated under chronic exposure conditions. This work is part of a study focusing on the combination effects of mixtures of estrogenic chemicals in marine and freshwater organisms (ACE, EVK1-CT-2001-100). As test organism the sea bass (*Dicentrarchus labrax*) was selected, a common species in European marine systems. Juveniles were exposed under a flow-through system for 14 days for a set of reference chemicals (17 β -estradiol, ethynylestradiol, nonylphenol, octylphenol, bisphenol A). Effects at subcellular level were analysed using vitellogenesis as endpoint. Its relevance is evaluated by further investigations about the individual fitness (condition factor, hepatosomatic index), as well as the liver cytochrome P450 activity. The general suitability of the sea bass as a model organism for the screening of estrogenic chemicals in the marine environment is discussed.

Ana Dulce Correia

CIIMAR- Centro Interdisciplinar de Investigação Marinha e Ambiental

Universidade do Porto

Rua dos Bragas,177

4050-123 Porto

Portugal

phone (+351) 223401800

fax (+351) 223390608

Sessions: 2C (Ecological consequences of endocrine disruptors)