

**1.09.2 A new standard for endocrine disruptor testing in fish - The integrated Fish Endocrine Disruptor Test (iFEDT)** L. Götz, COS University of Heidelberg; P. Pannetier, University of Heidelberg / Aquatic Ecology & Toxicology, COS; M.P. Fagundes, University Koblenz-Landau; D. Knapen, University of Antwerp / Zebrafishlab Dept Veterinary Sciences; L. Vergauwen, University of Antwerp / Zebrafishlab Dept Veterinary Sciences & SPHERE Dept Biology; H. Holbech, University of Southern Denmark / Biology; J.E. Morthorst, University of Southern Denmark / Department of Biology; T. Braunbeck, University of Heidelberg / Centre for Organismal Studies; L.A. Baumann, University of Heidelberg / Aquatic Ecology and Toxicology. Various EU research projects deal with the optimization of aquatic vertebrate test systems for the identification of endocrine disruptors (EDs). Attempts are made to cover all relevant life stages, to identify EDs with different modes of action, to replace existing amphibian tests and to include thyroid-related endpoints in existing fish test guidelines (TGs). For this end, the EU tender project "Integrated Fish Endocrine Disruptor Test (iFEDT)" was designed to establish a new test system that combines and extends two existing fish test guidelines: the Fish Short Term Reproduction Assay (OECD TG 229) and the Fish Sexual Development Test (OECD TG 234). Propylthiouracil (PTU; 0 to 78.125 mg/L; n = 4) was tested as a model substance for the inhibition of thyroid hormone synthesis. In addition to endpoints established in existing OECD TGs (fecundity, growth, gonad histopathology, vitellogenin, etc.), various thyroid-related endpoints such as hormone levels, thyroid histopathology and (eye) development were assessed during the 85 days exposure period. Although ongoing, the analysis of PTU effects already revealed that PTU not only impairs the reproductive performance of adult fish and reduces the growth of juvenile fish, but also induces thyroid follicle proliferation. Further endpoints are under investigation in both juvenile and adult fish: hormone and vitellogenin (VTG) levels, histopathology of the eyes, gonads and thyroid follicles, as well as swimbladder inflation. Based on preliminary results, the merged test design iFEDT already appears to be a promising tool to integrate various important ED modalities in fish into one assay. This study receives funding from the European Commission under contract no. No 07.0203/2018/794670/ETU/ENV.B.2 ("Development of a study protocol for regulatory testing to identify endocrine disrupting substances in biotic systems").