TESTOSTERONE METABOLISM MODULATION IN *NEOMYSIS INTEGER*: A BIOMARKER FOR ENDOCRINE DISRUPTION

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Cytochrome P450-dependent monooxygenases (P450s) are important enzymes in the metabolic system and are involved in the regulation of hormone synthesis and in the detoxification and/or activation of xenobiotics. P450s are found in virtually all aerobic organisms, from invertebrates to vertebrates. A number of endocrine disruptors are suspected of exerting their effects through disruption of normal CYP function.

Consequently, alterations of steroid hormone metabolism by CYP modulators can be an important tool to study potential effects of endocrine disruptors in invertebrates. The invertebrate mysid *Neomysis integer* (Crustacea; Mysidacea) was used to asses changes in the testosterone metabolism after a short-term exposure to four environmentally relevant CYP modulators. *N. integer* was exposed to sublethal concentrations of different endocrine disruptors, tributyltin (TBT), nonylphenol (NP) and phenobarbital (PB), and subsequently to testosterone. Identification and quantification of the steroid components was performed using liquid chromatography coupled with multiple mass spectrometry.

The effects of the different CYP modulators on phase I and phase II testosterone metabolism are discussed and compared. We conclude that the testosterone metabolism of *N. integer* is a sensitive endpoint to detect endocrine disruption of chemicals after a short- term exposure.