

## Poster #7

### **Mysid Crustaceans as Test Organisms for the Evaluation of Environmental Endocrine Disruption**

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Invertebrates account for roughly 95% of all animals, yet surprisingly little effort has been made to understand their value in signaling potential environmental endocrine disruption. Mysid shrimp (Crustacea: Mysidacea) have been put forward as suitable test organisms for the evaluation of endocrine disruption by several researchers and regulatory bodies (e.g. USEPA, OECD). Despite the long-standing use of mysids in toxicity testing, limited information exists on their endocrinology, and few studies have focused on the potential of these animals for evaluating the effects of hormone-disrupting compounds. Therefore, the question remains as to whether the current standardized mysid endpoints can be used or adapted to detect endocrine disruption, or if new procedures need to be developed, specifically directed at evaluating hormone-regulated processes in these animals. A recent review summarized the ecological importance of mysids in estuarine and marine ecosystems, their use in toxicity testing and environmental monitoring, and their endocrinology and important hormone-regulated processes to highlight their potential use in assessing environmental endocrine disruption (Verslycke et al., Environmental Toxicology and Chemistry 2004). Current research in mysids is focusing on (ecdys)steroid metabolism, molting, vitellogenesis, early-life stages, multi-generation testing and toxicogenomics. Future research efforts should be targeted at understanding the recently observed transgenerational effects in mysids, the importance of critical time windows of exposure, and the understanding of the mode-of-action of chemicals at a cellular level.

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