

The evaluation of estrogenic effects of river water by combination of several assays covering different mechanism

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Field survey and toxicity identification and evaluation (TIE) approaches are considered to play an important role in detection endocrine modulating effects in wildlife. There is need to provide specific tools a argument existing field programmes, and such monitoring studies. Joint application of instrumental and bioanalytical measurements of biological responses is advocated. This analysis could, amongst other techniques, include the application of TIE procedures, which utilize bioassay-directed fractionation schemes to isolate endocrine modulators and instrumental methods to identify the casual compounds. In vitro assays are highly useful for detecting chemicals which act through direct receptor mediated mechanism. These assays can divided into those that measure the potential of the chemical to bind to the receptor and those in which activation of the receptor is measured by induction of gene expression. Several assays covering different mechanism of action are currently available or are in development. Some of them are applied to assess the estrogenic potency in environmental samples such as river water, wastewater, leachate. Validation of the optimized methods will firstly require the identification of suitable assays. We have optimized in vitro bioassays, such as E-screen assay, EROD-microbioassay, Aromatase assay, for determining the ecotoxicological effect and estrogenic activity of river waters. It is suggested that combination of several assays covering different mechanism could assess the ecotoxicological effect of EDCs in wildlife.