

Screening for Environmental Endocrine Disruptors in Water Samples by GC/MS

John F. Leeder and Peter G. Cullis.

Department of Applied Chemistry RMIT
LaTrobe Street Melbourne 3001
email leeder@ozemail.com.au

Environmental endocrine disruptors (EEDs) have been defined as xenobiotic agents which interfere with the synthesis, secretion, transport binding, action or elimination of natural hormones in the body that are responsible for maintenance of homeostasis, reproduction, development and/or behavior. A number of endocrine disruption chemicals are found among known pollutants and include OC and OP pesticides and their metabolites, plasticisers such as phthalates, PCBs, dioxins non ionic detergents and their metabolites. In all over 100 compounds have been identified that are known or suspected EEDs.

The levels at which these compounds are active can be as low as ng L^{-1} and hence require specialised techniques for their detection. We have developed methods for preconcentration and screening to meet these requirements. Results are presented for the detection of EEDs in samples of water for human consumption including medical infusible water and drinking water using a number of pre concentration techniques. These include the use of programmable variable injection for GC/MS. Levels of EEDs in excess or recommended exposure levels have been found.
