Endocrine Disruptor Compounds (EDC) are chemicals that interfere with hormone systems in animals, including humans. Studies have shown that EDC can cause brain and sexual development problems: deformations of the body; altering normal hormone level and other diseases.

Estrogens are steroid hormones suspected to disrupt the endocrine system. More and more reports identifying the presence of estrogen in aquatic environment.

Bisphenol A is known as an endocrine disruptor and has been banned in plastic infant feeding bottles in several countries (Canada, EU (directive 2011/8/EU)).

A clean-up step is crucial in order to improve the sensitivity and the specificity before analysis.

Based on molecularly imprinted polymers, we have developed a powerful method for clean-up and pre-concentration of Phenolic Endocrine Disruptors Compounds.

**Principle of AFFINIMIP® SPE**

AFFINIMIP® SPE Bisphenol A: Infant formula and River Water

**Application of AFFINIMIP® SPE**

AFFINIMIP® SPE Estrogens: River water

- **Step**
- **Solvent**
  - Loading: Up to 15 mL of infant formula
  - Or up to 50 mL of water
  - Washing: 6 mL 60/40 Water/ACN
  - Dry 10 seconds
  - Elution: 3 mL MeOH

Analysis by HPLC-Fluorescence

Column: Hypersil Gold C18 column 150 x 4.6 mm ; 3µm

Vinj = 50 µL ; Fluox = 200 nm ; Fluor = 315 nm

**Conclusion**

The detection of endocrine disrupting compounds is a real interest to ensure wildlife and humans health. New AFFINIMIP® SPE have been developed for extraction of Estrogens and Bisphenol A from aqueous sample and more than 80% recovery were obtained with an efficient clean up. AFFINIMIP® SPE Estrogens can recognize structurally related compounds like the synthetic estrogens diehylstilbestrol and dienestrol with recovery higher than 50%.

Further studies are under development for other endocrine disruptor compounds AFFINIMIP® SPE.