Environmental screening of organic micropollutants in seawater by coupling a divinylbenzene passive sampling device and high resolution mass spectrometry

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Abstract

The abundance of organic micropollutants in water can be detrimental to the aquatic environment and its ecological health, resulting in severe consequences such as loss of animal habitats, reduction in biodiversity and intoxication - both acute and chronic - of organisms. Up to now, studies mainly report on the occurrence of organic micropollutants in freshwater environments, whereas data for marine environments are relatively scarce.

Therefore, the aim of this study was to sequester polar to non-polar emerging organic micropollutants in the marine environment (harbour of Zeebrugge, harbour of Oostende and open sea; all located in the Belgian Part of the North Sea) by using a divinylbenzene (DVB) passive sampler of which the extracts are analysed by two in-house validated high-end ultra-high-performance liquid chromatography and high resolution mass spectrometry (UHPLC-HMRS) methods.

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