Toxicity of coastal waters: use of a quick algal bioassay
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Citation for published version (APA):
TU 081
Optimization of the SPE step in the analysis of β-blockers and β-adrenoreceptors in natural water samples by SPE–GC technique
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Environmental water samples, especially sewage and marine-water samples are complex and often contain interfering elements that can mask or interfere with the analysed pharmaceuticals. In this work, direct analysis of these samples may not be possible. Additionally, the low concentrations in which the pharmaceuticals are generally found cause that a initial stage of concentration and purification of the analytes prior to analysis is necessary. Adsorption is a method that can be used to desorb these compounds from interfering matrixes (SPE). This is the most common sample preparation technique used in environmental analysis.

TU 082
Mustard fractionation based on normal phase SPE and reverse phase HPLC (RP-HPLC) for isolation of esterdrum disrupting chemicals in environmental extracts
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The identification of unknown active chemicals is still time and cost consuming due to the complexity of each active fraction (e.g. mixture effect). Hence, further fractionation steps are often needed. The aims of this study was to develop and to test the use of a first pre-fractionation step on SPE that will be followed by a RP-HPLC fractionation. First the separation of 12 EDCs have been evaluated with several elution conditions. Silica cartridges with a 4-step elution (heptane, heptane/dichloromethane (50/50, v/v), ethyl-acetate and methanol/water (50/50, v/v)) has been chosen for further investigations. For this cartridies, recoveries were assessed for the mixture alone and for a blank sediment extract spiked with this mixture. Finally, a natural sediment known to exhibit estrogenic, PXR-like, anti-androgenic and dioxin-like activity in these conditions. Good mixture recoveries (74-110 %), were obtained. The fractionation F1 contained only the PCBs and the PAHs, while 4-tert-octylphenol, triphenyl phosphate and fenofibrate were detected only in F2. Finally, steroids, bisphenol A and clortrimazole were found in F3 while F4 contained more polar chemicals.

TU 083
Towards a common mass spectra database for the identification of unknown environmental contaminants
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The identification of unknown compounds in environmental samples isolated during non-target screening or effect-directed analysis (EDA) is often a challenge on the way to the successful identification of the compounds, while the understanding of their occurrence and anti-estrogenic chemicals. Finally, PXR-like activity was mainly detected in F3.

TU 084
Construction of a water toxicity sensor based on luminescent bacteria
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Dissolved and intracellular microcystins in lake waters during a Planktothrix rubescens algal bloom: HPLC-quantification and crustacean acute toxicity test
T. Houpert1, L. Glisanczay1, S. V. Fields2, S. W. F. Cooper3, C. N. Irms, BRUGHERIO, Italy
1 Microcystis, highly toxic cyclic peptides, are a group of hepatotoxins produced by a number of aquatic species of cyanobacteria, such as Microcystis, Anabaena and Plankthothrix. Worldwide, contamination in water has prompted the development of detection methods for their identification and quantification. A massive seasonal development of Plankothrix rubescens in a reservoir destined for crop irrigation located in Southern Italy has lead to quantity algal toxin content in the water lake to verify the possible health risk. Microcystins dissolved into the water were quantified using a quick (4-5h) method to determine toxicity to algae based on changes in photosynthetic ef- ficiency. This Effect Directed Analysis was performed to unravel unknown and predominant compounds that are responsible for the toxic effect on the algae. In 2010-2011 passive samples were exposed at Hauswert (Westerheld, The Netherlands) and collected every 6 weeks to include the seasonal dynamics of both anthropogenic as well as natural compounds. Here, first results of this season sampling are presented and discussed. The results of the EDA analysis will be used in experiments where mixture toxicity, multi stress and community effects are taken into account to describe the overall toxic effect under relevant field conditions.

TU 085
Toxicity of coastal waters: use of a quick algal bioassay
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3 University of Amsterdam, AMSTERDAM, The Netherlands

Toxic contamination in water has prompted the development of detection methods for their identification and quantification. A massive seasonal development of Plankothrix rubescens in a reservoir destined for crop irrigation located in Southern Italy has lead to quantify algal toxin content in the water lake to verify the possible health risk. Microcystins dissolved into the water were quantified using a quick (4-5h) method to determine toxicity to algae based on changes in photosynthetic ef- ficiency. This Effect Directed Analysis was performed to unravel unknown and predominant compounds that are responsible for the toxic effect on the algae. In 2010-2011 passive samples were exposed at Hauswert (Westerheld, The Netherlands) and collected every 6 weeks to include the seasonal dynamics of both anthropogenic as well as natural compounds. Here, first results of this season sampling are presented and discussed. The results of the EDA analysis will be used in experiments where mixture toxicity, multi stress and community effects are taken into account to describe the overall toxic effect under relevant field conditions.

TU 086
Dissolved and intracellular microcystins in lake waters during a Planktothrix rubescens algal bloom: HPLC-quantification and crustacean acute toxicity test
T. Houpert1, L. Glisanczay1, S. V. Fields2, S. W. F. Cooper3, C. N. Irms, BRUGHERIO, Italy
1 Microcystis, highly toxic cyclic peptides, are a group of hepatotoxins produced by a number of aquatic species of cyanobacteria, such as Microcystis, Anabaena and Plankthothrix. Worldwide, contamination in water has prompted the development of detection methods for their identification and quantification. A massive seasonal development of Plankothrix rubescens in a reservoir destined for crop irrigation located in Southern Italy has lead to quantify algal toxin content in the water lake to verify the possible health risk. Microcystins dissolved into the water were quantified using a quick (4-5h) method to determine toxicity to algae based on changes in photosynthetic ef- ficiency. This Effect Directed Analysis was performed to unravel unknown and predominant compounds that are responsible for the toxic effect on the algae. In 2010-2011 passive samples were exposed at Hauswert (Westerheld, The Netherlands) and collected every 6 weeks to include the seasonal dynamics of both anthropogenic as well as natural compounds. Here, first results of this season sampling are presented and discussed. The results of the EDA analysis will be used in experiments where mixture toxicity, multi stress and community effects are taken into account to describe the overall toxic effect under relevant field conditions.