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Standard Operating Procedure for Solid Phase Adsorption Toxin Testing (SPATT) Assemblage and Extraction of HAB Toxins

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Abstract

SPATT has been developed and tested for a variety of resins (see review by Kudela, 2017). These Standard Operating Procedures (SOP) outline the use of the resin DIAON HP20 since it has been demonstrated to quantify microcystins, anatoxin-a, saxitoxin, domoic acid, and okadaic acid in fresh, brackish, and marine waters, all from the same SPATT sampling device (Lane et al. 2010; Miller et al. 2010, Kudela 2011, Gibble and Kudela, 2014, Howard et al., 2017, Kudela, 2017, Peacock et al., 2018). Cylindrospermopsin and nodularin have also been detected using SPATT with DIAON HP20 resin in California, however, the use of DIAON HP20 for these toxins has not been well characterized in the laboratory. This methodology is ready for wider adoption by the research, monitoring, and management communities interested in detecting and tracking the dynamics of freshwater and marine toxins. The SOP described herein for the assemblage and construction of SPATT bags can be used for deployment in freshwater, brackish and marine environments and the extraction process described below is for the analysis of both marine toxins and cyanotoxins.

Attachments

PDF

SPATT SOP All Toxins...

737KB

Troubleshooting