

9th World Congress on

Green Chemistry and Technology

September 17-19, 2018 | Amsterdam, Netherlands

Optimization of reverse phase liquid-liquid microextraction (RP-DLLME) method coupled with high performance liquid chromatography (HPLC) for the determination of chlorophenols (CPs) in marine sediments



Morteza Ziyaadini Avarani

Chabahar Maritime University, Iran

The analysis of chlorophenols (CPs) from environmental samples is an important topic because of their effects on the estrogen's health of humans and wildlife. Sediments or solids are good adsorbents of phenolic pollutants due to their active and extensive adsorbent and superficial surface activity. Sediments can accumulate this material with high concentrations and affect aquatic life. Due to the importance of monitoring the analysis of phenolic compounds in sediment and solid samples, it has been widely studied. Especially in this study, a quick, simple and inexpensive method is used to measure CPs in marine sediments. The reverse phase liquid-liquid microextraction (RP-DLLME) method was used to pre-concentrate of CPs after initial extraction by extraction of ultrasound waves measured by HPLC apparatus. Factors such as extraction time, pH, time and speed of centrifugation, type and volume of extraction solvent and effect of the volume of disperser solvent were optimized. Under optimal conditions linear ranges for 2-chlorophenol and 2-4-dichlorophenol were between 0.001-2 mg/Kg⁻¹ and 0.2-2 mg/Kg⁻¹, respectively. The concentration factor of 101 and 102 and the relative standard deviation (n=5) 5.9, 3.3 were obtained for 2-chlorophenol and 2,4-dichlorophenol, respectively. Then suggested method has been used for determination of CPs and 0.21-2.18 mg/Kg⁻¹ as well as 0.68-2.55 mg/Kg⁻¹ values was determined for 2-chlorophenol and 2-4-dichlorophenol, respectively in marine sediments of Chabahar Bay.

Biography

Morteza Ziyaadini Avarani has completed his PhD from University of Sistan and Baluchestan. He is a Scientist who works at Chabahar Maritime University. His field of research interests includes the Marine Sciences and Marine Chemistry. He has published more than 15 papers in reputed journals.

M.ziyaadini@cmu.ac.ir

Notes: