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Determination of four pyrethroid insecticides in water samples through membrane emulsification-assisted liquid-liquid microextraction based on solidification of floating organic droplets

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Highlights:

- Combine membrane emulsification with liquid-liquid microextraction;
- Surfactant ([P₄₄₄₁₂]Br) can be removed from water via KPF₆ addition;
- Shirasu porous glass (SPG) membrane is used for dispersion of extractant.

Abstract

A novel membrane emulsification-assisted liquid-liquid microextraction method based on the solidification of floating organic drops was used to detect four pyrethroid pesticides (deltamethrin, etofenprox, fenprothrin, and bifenthrin). In this method, [P₄₄₄₁₂]Br was used as a surfactant that could be removed from water via the addition of KPF₆. The extraction solvent was separated after centrifugation and solidification on the water surface. The parameters affecting the recovery of the target compounds, including the surfactant

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