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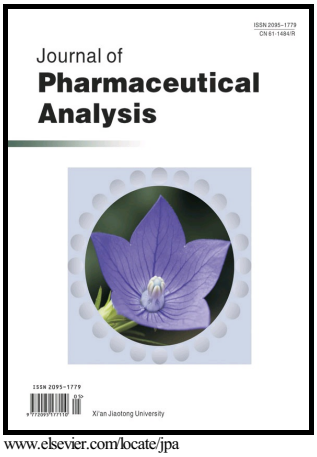

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Electromembrane extraction – recent trends and where to go

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ABSTRACT

Electromembrane extraction (EME) is an analytical microextraction technique, where charged analytes (such as drug substances) are extracted from an aqueous sample (such as a biological fluid), through a supported liquid membrane (SLM) comprising a water immiscible organic solvent, and into an aqueous acceptor solution. The driving force for the extraction is an electrical potential (dc) applied across the SLM. In this paper, electromembrane extraction (EME) is reviewed. First, the principle for EME is explained with focus on extraction of cationic and anionic analytes, and typical performance data are presented. Second, papers published in 2016 are reviewed and discussed with focus on (a) new SLMs, (b) new support materials for the SLM, (c) new sample additives improving extraction, (d) new technical configurations, (e) improved theoretical understanding, and (f) new applications. Finally, important future research objectives and directions are defined for further development of EME, with the aim of establishing EME in the toolbox of future analytical laboratories.

Keywords:
Sample preparation; Microextraction; Electromembrane extraction

1. Introduction