
Sample preparation and microextraction methods in pharmaceutical analysis

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Abstract

Sample preparation is a critical step of analytical workflow and contributes significantly to the overall accuracy and precision of an analytical method. This talk will briefly discuss traditional exhaustive sample preparation methods such as liquid-liquid extraction (LLE) and solid-phase extraction and compare/contrast them to the emerging trend towards greener sample preparation methods, specifically solid-phase microextraction (SPME). The key features of SPME will be discussed including different configurations, in vivo sampling and determination of free concentrations. Additionally, parameters that affect SPME performance and optimization will be discussed in detail, including coating selection, extraction time optimization and selection of optimal desorption conditions. Finally, selected application of SPME in pharmaceutical analysis, natural product analysis and bioanalysis will be presented.

Keywords: sample preparation, solid phase microextraction, in vivo sampling, solid phase extraction, liquid liquid extraction

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