

Preconcentration and Determination of Cyproheptadine in Biological Samples by Hollow Fiber Liquid Phase Microextraction Coupled with High Performance Liquid Chromatography

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Abstract : In this study, a liquid phase microextraction by hollow fiber (HF-LPME) combined with high performance liquid chromatography-UV detector was applied to preconcentrate and determine trace levels of Cyproheptadine in human urine and plasma samples. Cyproheptadine was extracted from 10 mL alkaline aqueous solution (pH: 9.81) into an organic solvent (n-octanol) which was immobilized in the wall pores of a hollow fiber. Then, it was back-extracted into an acidified aqueous solution (pH: 2.59) located inside the lumen of the hollow fiber. This method is simple, efficient and cost-effective. It is based on pH gradient and differences between two aqueous phases. In order to optimize the HF-LPME, some affecting parameters including the pH of donor and acceptor phases, the type of organic solvent, ionic strength, stirring rate, extraction time and temperature were studied and optimized. Under optimal conditions enrichment factor, limit of detection (LOD) and relative standard deviation (RSD(%), n=3) were up to 112, 15 $\mu\text{g.L}^{-1}$ and 2.7, respectively.

Keywords : biological samples, cyproheptadine, hollow fiber, liquid phase microextraction

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