

Hollow Fiber Supported Ionic Liquid Membrane Microextraction for Determination of Fluoroquinolone Antibiotics in Milk by High-performance Liquid Chromatography

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A new hollow fiber microextraction using ionic liquid as carrier coupled with high-performance liquid chromatography was developed for determination of fluoroquinolone antibiotics in milk. In this technology, a porous polypropylene hollow fiber filled with water-ionic liquid. The influence of different factors on the HF-LPME efficiency including the type of hollow fiber membrane carrier, the pH and ion strength of the donor solution, the pH of the acceptor solution, stirring rate and extraction time were examined. The best HF-LPME conditions were as follows: [OMim][BF₄] impregnated in the pores of the hollow fiber, 100 mmol/L of NaH₂PO₄ at pH 11.0 as the acceptor solution injected into the lumen of the hollow fiber, 100 mmol/L H₃PO₄ (pH 5.0) used as the donor solution, stirring rate of 600 rpm and extraction time of 2 h. The LPME method was applied successfully to the analysis of fluoroquinolone antibiotic in milk.