Molecularly imprinted solid-phase extraction of enrofloxacin and ciprofloxacin from bovine milk samples

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A selective molecularly imprinted solid-phase extraction procedure was developed for the simultaneous identification of enrofloxacin and its active metabolite ciprofloxacin in bovine milk. The water-compatible ofloxacin imprinted polymers were synthesized in a water-methanol system and its show a high degree of cross-reactivity for enrofloxacin and ciprofloxacin in an aqueous environment. The molecularly imprinted polymers were applied as a selective sorbent of solid phase extraction focusing upon complex milk matrices, which allowed the matrix compounds present in milk sample to be removed effectively. The extracts were clean enough to inject directly into HPLC for further chromatographic separation and no interferences originated from biological matrix were observed. The mean recoveries of enrofloxacin and ciprofloxacin from bovine milk were 82.6-93.5% and 81.2-94.8% with relative standard deviations below 7.5% at three different concentrations.