Determination of Piroxicam in Pharmaceutical Formulations and Human Serum by Square-Wave Stripping Voltammetry

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A simple, sensitive, and precise square-wave adsorptive stripping voltammetric procedure for quantification of trace piroxicam has been developed. Piroxicam was adsorbed on the surface of hanging mercury drop electrode (HMDE) in acetate buffer of pH 4 and its C=O group was reduced. Limit of detection of bulk piroxicam after 120 s preconcentration was $5.4 \times 10^{-11}$ mol L$^{-1}$. The proposed procedure was successfully applied to determination of piroxicam in its pharmaceutical formulations (Piroxidine® capsules, Dispercam® tablets and Dispercam® ampoules); mean percentage recoveries of $98.4 \pm 0.36$ – $100.9 \pm 1.23$ were achieved. The results were statistically compared to these obtained by a direct UV spectrophotometric method. Moreover, the procedure was successfully applied to quantification of piroxicam in spiked human serum without the necessity of sample pretreatment or time-consuming extraction prior to the analysis, which makes the proposed electroanalytical procedure superior to the most of other reported methods, especially chromatographic. The achieved detection limit of piroxicam in human serum was $4.32 \times 10^{-10}$ mol L$^{-1}$ (0.143 ng mL$^{-1}$).

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