

Validation of Selective Electrochemical Method for Determination of Sumatriptan in Combined Dosage Form

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Abstract

A novel sumatriptan (SUM) selective electrode was investigated with dioctyl phthalate as a plasticizer in a polymeric matrix of carboxylated polyvinyl chloride (PVC-COOH), based on the interaction between the drug solution and the dissociated COOH groups in the PVC-COOH. The sensor was fabricated by using PVC-COOH only as anionic site without incorporation of an ionophore. Linear response of SUM within a concentration range of 10^{-6} - 10^{-3} M with a slope of 34 ± 1 mV/decade over pH range of 6-8 was observed. The measurement was characterized by a fast stable response within about 45 seconds. The proposed sensor was successfully applied for the selective determination of sumatriptan in the pure powder form and in its pharmaceutical formulation with naproxen without any interference. The results obtained by the proposed procedure were statistically analyzed and compared with those obtained by the U.S. Pharmacopeia method. No significant difference for either accuracy or precision was observed.

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