

Real time selective monitoring of the dissolution behavior of Pseudoephedrine Sulfate and Loratadine in their binary and ternary dosage form by utilization of In-line potentiometric sensor

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Abstract

An electro-analytical procedure was progressed for quantitative determination and monitoring the dissolution behavior of both cationic pseudoephedrine sulfate (PSE sulfate) and loratadine (LOR) drugs in their binary mixture with each other and ternary mixture with paracetamol (PAR) by in-line potentiometric analysis system without a need for pre-treatment or derivatization of the sample. This approach is performed by measuring continuously the increase in the generated emf over time by incorporating an in-site selective electrode for PSE sulfate and LOR fabricated utilizing polymeric membrane of poly (vinyl chloride) (PVC), tetraphenyl borate (TPB) and potassium tetrakis (4-chlorophenyl) borate (KTCBP) as a cation exchanger, Bis(2-ethylhexyl) sebacate and nitrophenyl octyl ether (NPOE), were utilized as plasticizers for determination of PSE sulfate and LOR, conjointly. The proposed sensors for both drugs exhibited stable and fast responses over wide PSE sulfate and LOR concentration range (2×10^{-5} to 2×10^{-2} mol/L regarding PSE sulfate while 1×10^{-5} to 1×10^{-2} mol/L regarding LOR). Afterwards, the proposed potentiometric method's validation was performed, and it is supposed to be eco-friendly and green technique in which consumption of solvents and sample pre-treatment were not mandatory for its application.

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