

Potentiometric sensing of Valaciclovir Hydrochloride in the presence of its acid induced degradation product with real time acquisition of the dissolution profile from its pharmaceutical formulations

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Abstract

The possibility of obtaining continuous analytical signal excluding any pre-treatment of sample is the most environmental friendly method of analysis. In the current manuscript, a solid contact sensor was fabricated for dual purpose; firstly, determination of valaciclovir hydrochloride (VAL) in existence of its acid induced degradation product, Guanine (GUA) and secondly, real time acquisition of the dissolution profile from its pharmaceutical formulations (Valtrex) and (Valysernex). The sensing membrane was fabricated using a polyvinyl chloride (PVC), sodium tetraphenyl borate as a cation exchanger with bis (2-ethylhexyl) sebacate as a plasticizer. The proposed sensor displayed fast, stable Nernstian responses across VAL concentration range (1×10^{-5} M to 1×10^{-2} M). The opportunities of the proposed sensor with respect to other off-line classical techniques originates from being in-line, time saving, cost-effective, green and simple. ICH guidelines were followed to ensure validation of the proposed method concerning accuracy and precision.

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