QUANTITATIVE ANALYSIS METHODS OF THE PHARMACEUTICAL PREPARATION CONTAINING OLOPATADINE HYDROCHLORIDE

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This study is concerned with the quantitative analysis of Olopatadine hydrochloride (OPT) by using different methods. The first one is a voltammetric method which is used for electrochemical determination of OPT. Electrochemical oxidation of OPT was determined at +1.201 V vs. Ag/AgCl in 0.5 M H2SO4 with diffusion controlled and irreversible. The second method chromatographic method (HPLC) was carried out on reverse phase Waters®-Symmetry Shield RP-18 HPLC column (150 mm × 4.6 mm, 5µm) column using a mixture of acetonitrile: methanol: water, in the ratio 10:60:30 (v/v/v) as mobile phase at a flow rate of 0.75 mL/min. UV detection was performed with diode-array detector. A simple, rapid, selective and stable HPLC method was developed for the determination of OPT. Linear working range was found to be 10.0-80.0 µg.mL⁻¹ with the detection limits of 0.173 for OPT. Caffeine was used as internal standard for the purpose of quantification of the drug in HPLC. In the third method, first-order derivative spectrophotometry, for the determination of OPT the peak amplitude at 288.8 and 308.4 nm was used. The linear working range of OPT was found to be 20.0-140.0 µg.mL⁻¹ with the correlation coefficients of 0.9997 and 0.9996, respectively. Detection limit was estimated to be 0.346 and 0.600 µg.mL⁻¹ for 288.8 nm and 308.4 nm, respectively. All the proposed methods were fully validated and a comparison was made for assay determination of OPT in formulations. The results confirm that the methods are suitable for its intended purpose.

KEYWORDS: Antihistamine; Voltammetry; Olopatadine HCl; First derivate UV spectrophotometry; High performance liquid chromatography.

REFERENCES: