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Analytical method development for the determination of Olopatadine

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A simple precise and accurate spectrophotometric method was developed for the determination of Olopatadine in pharmaceutical formulations. Olopatadine is an anti-histaminic, with selective H1 -receptor antagonist activity. Its principal effects are mediated via inhibition of H1 receptors. These drugs selectively bind to H1 receptors there by blocking the actions of endogenous Histamine. They act on the bronchi, capillaries, and other smooth muscles. Olopatadine is an inhibitor of the release of Histamine from the mast cell and a relatively selective H1 receptor antagonist that inhibits the in vivo and in vitro type 1 immediate hypersensitivity reaction including inhibition of histamine induced effects on human conjunctival epithelial cells. A double beam UV-VIS spectrophotometer (UV-1800, Shimadzu) connected to computer loaded with spectra manager software UV Probe was employed with spectral bandwidth of 1nm and wavelength accuracy of ± 0.3 nm with a pair of 10 mm matched quartz cells.

Olopatadine has shown absorption maxima (λ_{max}) at 221 nm in 0.1 N sodium hydroxide. A graph was drawn by taking concentration of the drug on the x- axis and the corresponding absorbance values on the y- axis. Olopatadine follows Beer-Lambert's law over the concentration range of 1.0-25 µg/ml (r^2= 0.999). The % RSD in precision and accuracy studies was found to be less than 2.0. The proposed methods were validated as per the ICH guidelines. The developed methods can be successfully applied for the determination of Olopatadine in pharmaceutical formulations.

New derivative spectrophotometric methods for the determination of Zolpidem Tartrate

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Two simple, rapid and sensitive derivative spectrophotometric methods were developed for the determination of Zolpidem tartrate in pharmaceutical dosage forms in buffers. Zolpidem tartrate is a Imidazopyridine-derivative sedative and hypnotic structurally unrelated to benzodiazepines and other sedatives and hypnotics. Chemically, Zolpidem is N, N, 6-trimethyl-2-p-tolylimidazo[1,2-a] pyridine-3-acetamide L-(+)-tartrate (2:1). Zolpidem tartrate is a white to off-white crystalline powder that is sparingly soluble in water, alcohol, and propylene glycol with a molecular weight of 764.88. Zolpidem behaves as a sleep inducer without the muscle relaxant and anticonvulsant effects of the benzodiazepines. The hypnotic actions of Zolpidem, like benzodiazepine hypnotics, are mediated at the benzodiazepine recognition site of the GABA receptor complex. A double beam UV-VIS spectrophotometer (UV-1800, Shimadzu) connected to computer loaded with spectra manager software UV Probe was employed with spectral bandwidth of 1nm and wavelength accuracy of ± 0.3 nm with a pair of 10 mm matched quartz cells. Method A was developed in Phosphate buffer and the amplitude was recorded where as in Method B Borate buffer was used and the amplitude was recorded. A graph was drawn with concentration of the drug on the x-axis and the corresponding amplitude on the y- axis. Beer-Lambert's law was obeyed over the concentration range of 1.0-30 µg/ml for both Method A and B with correlation coefficient 0.999. The % RSD in precision and accuracy studies was found to be less than 2.0. The proposed methods were validated and can be successfully applied for the determination of Zolpidem tartrate in pharmaceutical formulations.