ISSN: 0975-8585

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Validating a Stability Indicating HPLC Method for Kinetic Study of Ondansetron Degradation in Acidic, Basic and Oxidative Conditions.

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ABSTRACT

A high performance liquid chromatographic method was developed for the determination of ondansetron hydrochloride in the presence of its degradation products. Stress degradation studies were performed on ondansetrone hydrochloride bulk powder using 5 M hydrochloric acid, 2 M sodium hydroxide, 10% hydrogen peroxide, heat and light. Chromatographic separation was performed on a Nava-Pak C18 column using a mixture of 20 mM KH_2PO_4 (pH 5.0) and acetonitrile (65:35, v/v) as the mobile phase and UV detection at 284 nm. The developed method was accurate (error <1.5%) and precise (CV <2%) within the linear range of 2-50 μg/ml of ondansetron hydrochloride (r^2 >0.999). The kinetics of degradation of ondansetron hydrochloride in acidic, basic, and oxidative conditions indicated first order profiles with regards to drug concentration in the temperature range of 60-90°C.

Keywords: Ondansetron, HPLC, Degradation, Kinetics, Stability

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