OMICS Group Conferences
Accelerating Scientific Discovery

3rd World Congress on
Bioavailability & Bioequivalence

March 26-28, 2012 Marriott Hotel & Convention Centre, Hyderabad, India

Validated stability-indicating HPLC method for the determination of eberconazole nitrate: Application to hydrolytic, thermal, oxidative and photolytic degradation kinetics

M. Vamsi Krishna*, Rajendra N. Dash, B. Jalachandra Reddy, P. Venugopal, P. Sandeep and G. Madhavi

Alliance Institute of Advanced Pharmaceutical and Health Sciences, India

An isocratic ion - pair RP-HPLC–UV method is presented for the determination of Eberconazole nitrate (EBZ) and its hydrolytic, oxidative, thermal and photolytic degradation products. The method was based on HPLC separation of EBZ from its degradation products using Lichrospher C18 column (250 mm × 4.6 mm, 5 µm) with mobile phase consisting of methanol-potassium dihydrogen orthophosphate (pH 2.8; 10 mM, tetra butyl ammonium hydroxide ; 10 mM) (25:75, v/v) at a flow rate of 1.0 mL min^{-1}. pH of buffer was adjusted with o-phosphoric acid. Analytes were detected and quantified at 220 nm. The method was validated for specificity, linearity, precision, accuracy and limit of detection, limit of quantification, robustness, and solution stability. The calibration plot was linear over the concentration range of 0.9 - 80 µg mL^{-1} having a correlation coefficient (r^2) of 0.999. Limits of detection and quantification were 0.3 and 0.9 µg mL-1, respectively. Intra-day and inter-day precision (% RSD) was 1.13 and 1.67, respectively. The proposed method was used to investigate the degradation kinetics of EBZ under specified stressed conditions; degradation of EBZ followed (pseudo) first-order kinetics. The kinetic parameters (rate constant, $t_{1/2}$, and t_{90}) of the degradation of EBZ were calculated.

marothu_vamsi@rediffmail.com