Sensitive determination of ranitidine in rabbit plasma by HPLC with fluorescence detection

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Abstract

A sensitive high-performance liquid chromatographic method for determination of ranitidine (RAN) in rabbit plasma is described. The method is based on liquid–liquid extraction, labeling with dansyl chloride and monitoring with fluorescence detector at 338 nm (ex)/523 nm (em). Plasma samples were extracted with diethyl ether alkalinized with 1 M sodium hydroxide. Ephedrine HCl (EPH-HCl) was used as internal standard. Both, RAN and EPH were completely derivatized after heating at 60 °C for 10 min in sodium bicarbonate solution (pH 9.5). The derivatized samples were analyzed by HPLC using Agilent Zorbax Extended C18 column (150 mm × 4.6 mm i.d.) and mobile phase consists of 48% acetonitrile and 52% sodium acetate solution (0.02 M, pH 4.6). The linearity of the method was in the range of 0.025–10 μg/ml. The limits of detection (LOD) and quantification (LOQ) were 7.5 ± 0.18 and 22.5 ± 0.12 ng/ml, respectively. Ranitidine recovery was 97.5 ± 1.1% (n = 6; R.S.D. ± 1.8%). The method was applied on plasma collected from rabbits at different time intervals after oral administration of 5 mg/kg ranitidine HCl.

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