Reversed Phase High Performance Liquid Chromatographic and Thin Layer Chromatographic Methods for the Simultaneous Determination of Benazepril Hydrochloride and Hydrochlorothiazide in Cibadrex Tablets

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Abstract

Two procedures were developed for simultaneous determination of benazepril hydrochloride (I) and hydrochlorothiazide (II) in pure, laboratory made mixtures and in pharmaceutical dosage form “Cibadrex tablets®” using reversed phase high performance liquid chromatographic and thin layer chromatographic methods.

For reversed phase HPLC, a new very sensitive, rapid, selective method was developed. The linearity ranges were 32-448 ng/20 μl and 40-560 ng/20 μl for benazepril hydrochloride and hydrochlorothiazide, respectively. The corresponding recoveries were 99.38 ± 1.526 and 99.2 ± 1.123.

The minimum detection limits were 7 ng/20 μl and 14 ng/20 μl for benazepril hydrochloride and hydrochlorothiazide respectively.

On the other hand, a new, simple, sensitive and fast thin layer chromatographic scanning densitometric method was developed for simultaneous determination of benazepril hydrochloride and hydrochlorothiazide using ethyl acetate: methanol: ammonia (85: 20: 10 v/v) as the developing system. The Rf values were 0.33 & 0.68 for benazepril hydrochloride and hydrochlorothiazide respectively. The minimum detection limit obtained was 0.12 μg/spot for benazepril hydrochloride and 0.24 μg/spot for hydrochlorothiazide. The mean percentage recoveries were 100.04 ± 1.102 and 99.31 ± 1.009 for benazepril hydrochloride and hydrochlorothiazide respectively.

The two proposed methods were simple, precise, sensitive and could be successfully applied for the determination of pure, laboratory made mixtures and pharmaceutical dosage forms.