Validated Stability Indicating Assay of Gemifloxacin by different chromatographic and Spectrophotometric methods of analysis

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Abstract

Five chromatographic and spectrophotometric methods have been developed for the determination of gemifloxacin (GF) in bulk powder and pharmaceutical preparations. The first method depends on RP-HPLC, separation of drug and degradation products was successfully achieved on a Hypersil BDS C18 column using mobile phase consisted of citrate buffer adjusted to 2.5 pH by citric acid: Acetonitrile (70:30, v/v) at 1 ml/min flow rate and 267 nm wavelength of detection. Another chromatographic method which achieved successful separation of drug and its degradation products depends on TLC densitometry using mobile phase consisted of chloroform: methanol: toluene: diethylamine: water (33.6:33.6:16.8:10.8:6.6,v/v/v/v/v) with 20?l spotting volume and 260 nm wavelength of detection. Other three simple, rapid and sensitive UV methods have been developed for GF estimation in presence of its degradation products. One method depends on the first order derivative where GF shows sharp peak at 258.6 nm.