Validated Stability Indicating Assay Of Linezolid By Spectrophotometric And High Performance Liquid Chromatographic Methods

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Abstract

Simple, precise and sensitive methods have been used for the determination of linezolid and its alkaline induced degradation product and in pharmaceutical dosage form. The first method depends on differential derivative spectrophotometry that is based on inducing spectral changes upon changing pH of the medium. In this method AA values have been measured at 227.2 nm and Beer's law was obeyed in concentration range of 2.0-14.0 gm. Another three methods based on derivative spectrophotometry including D2, D3 and D4 were proposed in which the derivative amplitudes were measured at 260.9 nm, 245.6 nm respectively. The calibration curve was linear over the concentration range of 1.0-14.0 gm for these methods. The fifth method depends on reversed phase high performance liquid chromatographic method that was successful in the resolution of linezolid and its alkaline induced degradate using ZORBAX-C18 column and a mobile phase of KH2PO4 buffer adjusted at pH3.0: methanol: acetonitrile in the ratio of 60:20:20. A linear response was observed over the range of 2.0-24.0 gm. The retention times of linezolid and its degradate were 2.973+-0.008 & 1.464+-0.118 respectively. All methods were successfully applied to the commercial pharmaceutical preparation without interference from common ingredients accompanying the drug.

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