Determination of Letrozole in Pharmaceutical Preparation and Human Plasma Based on Fluorometric Detection

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Abstract

Simple, accurate and precise spectrofluorometric and chromatographic methods were developed and validated for the determination of letrozole (LTZ) in bulk powder, pharmaceutical preparation and human plasma. The spectrofluorometric method was based on measuring the native fluorescence of LTZ at 587 nm upon excitation at 239 nm in methanol. RP-HPLC was developed where the mobile phase used was acetonitrile: water: methanol (50:35:15, v/v/v), delivered at a flow rate of 1.5 ml/min on a stationary phase composed of C18 column. The detection was carried out using a fluorimetric detector at 289 nm for human plasma; while for bulk and pharmaceutical preparation, benzophenone was used as an internal standard and the detection was carried out using a UV detector at 239 nm for LTZ and 254 nm for benzophenone. The methods were validated as per ICH guidelines regarding accuracy, precision and system suitability; which were found to be within the acceptable limits. The methods were applied successfully for the determination of LTZ in bulk powder, pharmaceutical preparation Femara® tablets and human plasma.

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