A Validated HPLC Method for Separation and Determination of Terbutaline Enantiomers

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Abstract

A simple, rapid, and validated method for separation and determination of terbutaline enantiomers was developed. Terbutaline was separated and determined on a Vancomycin Chirobiotic V column (250 × 4.6 mm), using a mixture of methanol, acetic acid, and triethylamine (100:0.1:0.1% v/v/v) as a mobile phase at 20°C and at a flow rate of 1 ml/min. The UV detector was set to 276 nm. Acetyl salicylic acid (aspirin) was used as an internal standard. The applied high-performance liquid chromatography (HPLC) method allowed separation and quantification of terbutaline enantiomers with good linearity (r > 0.999) in the studied range. The relative standard deviations (RSD) were 1.10 and 1.32% for the terbutaline enantiomers with accuracy of 99.80 and 99.55. The limit of detection and limit of quantification of terbutaline enantiomers were found to be 0.05 and 0.10 µg · ml−1, respectively. The method was validated through the parameters of linearity, accuracy, precision, and robustness. The HPLC method was applied for the quantitative determination of terbutaline in pharmaceutical formulations.

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