# Comparative Study for Determination of Atracurium Besilate in Presence of Its Toxic Degradant (Laudanosine) by Reversed Phase HPLC and TLC Densitometry

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**Abstract**

Two methods are described for the stability indicating determination of Atracurium Besylate in presence of its major degradant (Laudanosine). The first method was based on reversed liquid chromatography, C18 column (150 mm Ĭ 4.5 mm, 5 Õm packing) was used for separation. The mobile phase consisted of a mixture of 0.075 M potassium dihydrogen: methanol: acetonitrile adjusted to a pH of 3.1 Ñ 0.2 with o-phosphoric acid (50:30:20, by volume). Flow rate of 1.0 mL/min was applied. Quantitation was achieved with UV detection at 280 nm. Linearity, accuracy and precision were found to be acceptable over the concentration range of (1-8 Õg/mL) atracurium besylate (ATR). The second method was based on the thin layer chromatography (TLC) separation of the two drugs followed by densitometric measurements of their spots at 282 nm. The separation was carried out on silica gel plates using methanol: ethyl acetate (3:7, v/v) as developing system. The linear regression analysis data were used for the regression line in the range (2-18 Õg/mL) of ATR. The two proposed methods were successfully applied to the determination of ATR in presence of LDS in laboratory prepared mixtures and in commercial vials. The optimized methods proved to be accurate, precise, highly selective and highly sensitive.

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