



## **Bioanalysis of Darunavir in human plasma using Liquid Chromatography coupled with tandem mass spectrometry**

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**Abstract :** This paper describes a simple and rapid LC-MS/MS method for the determination of darunavir in human plasma using carbamazepine as internal standard (IS). Analyte and the IS was extracted from the 100  $\mu$ L of human plasma *via* protein precipitation (PP). The chromatographic separation was achieved on a C<sub>18</sub> column by using a mixture of 0.1% formic acid in acetonitrile – 5mM ammonium acetate buffer (75:25, v/v) as the mobile phase at a flow rate of 0.7 mL/min. Detection involved an API-4000 LC-MS/MS with electrospray ionization in the positive mode. The calibration curve obtained was linear ( $r^2 \geq 0.99$ ) over the concentration range of 20.10–3501.23 ng/mL. Method validation was performed as per FDA guidelines and the results met the acceptance criteria. The proposed method can adopt for the regular bioequivalence study analysis and also can easily adoptable for clinical drug monitoring due to its simplicity and ruggedness.

**Keywords :** Darunavir in human plasma; Protein precipitation (PP); Liquid chromatography–tandem mass spectrometry; Method validation.

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