

## Quantification of Torsemide in Rabbit Plasma by Liquid Chromatography/electrospray Mass Spectrometry and its Application

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**SUMMARY.** A sensitive and simple liquid chromatography/electrospray mass spectrometry (LC-ESI-MS) method for determination of torsemide in rabbit plasma using one-step protein precipitation was developed and validated. After addition of midazolam as internal standard (IS), protein precipitation by acetonitrile was used in sample preparation. Chromatographically separation was achieved on an SB-C18 (2.1 mm×150 mm, 5 μm) column with acetonitrile-0.1 % formic acid as the mobile phase with gradient elution. Electrospray ionization (ESI) source was applied and operated in positive ion mode; selected ion monitoring (SIM) mode was used to quantification using target fragment ions *m/z* 349 for torsemide and *m/z* 326 for the IS. Calibration plots were linear over the range of 5-1000 ng/mL for torsemide in rabbit plasma. Lower limit of quantification (LLOQ) for torsemide was 5 ng/mL. Mean recovery of torsemide from plasma was in the range of 82.7-88.2 %. CV of intra-day and inter-day precision were both less than 15 %. This method is simple and sensitive enough to be used in pharmacokinetic research for determination of torsemide in rabbit plasma.

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**KEY WORDS:** LC-MS, rabbit plasma, torsemide

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