Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **32** (7): 1102-6 (2013)

Short Communication
Received: May 17, 2013
Revised version: June 21, 2013
Accepted: June 22, 2013

Quantification of Vinorelbine Tartrate in Rat Plasma by LC-MS

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***SUMMARY*. A sensitive and simple liquid chromatography/electrospray mass spectrometry (LC-ESI-MS) method for determination of vinorelbine tartrate in rat 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. Chromatographic 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* 779.7 for vinorelbine tartrate and *m*/*z* 326.4 for the IS. Calibration plots were linear over the range of 10-2000 ng/mL for vinorelbine tartrate in rat plasma. Lower limit of quantification (LLOQ) for vinorelbine tartrate was 10 ng/mL. Mean recovery of vinorelbine tartrate from plasma was in the range of 86.5 -111.6%. CV of intra- 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 vinorelbine tartrate in rat plasma.**

KEY WORDS: LC-MS, Rat plasma, Vinorelbine tartrate.

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ISSN 0326-2383