Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **32** (7): 989-95 (2013)

Regular Article
Received: March 28, 2013
Revised version: June 27, 2013
Accepted: July 1, 2013

Simultaneous Determination of Tramadol and M1 in Patient Plasma Using LC-MS/MS

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***SUMMARY*. A rapid and simple liquid chromatography-tandem mass spectrometry (HPLC-MS/MS) method was established for the simultaneous determination of tramadol and O-demethyl tramadol (M1) in the plasma of postoperative patients treated with tramadol for pain relief. The plasma sample was prepared by precipitating plasma protein from 50 μL plasma using 150 μL methyl cyanide solution, fluconazole was used as the internal standard. The assay method demonstrated wide linearity for the two analytes in a concentration range of approximately 5~1000 ng/mL, the relative standard deviation (RSD) of tramadol and M1 were less than 10%. In conclusion, this method was accurate, rapid, sensitive and successfully applied to the pharmacokinetic study of tramadol and M1.**

KEY WORDS: Liquid chromatography-tandem mass spectrometry, O-demethyl tramadol, Pharmacokinetics, Tramadol.

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GuoXiang Wang and XiangCai Zhang contributed comparably to this study.