



Determination of Meropenem in Rabbit Plasma by LC–MS/MS

Guanyang LIN¹, Haiyan ZHANG², Feng XUE³, Wenjuan LI³, Naihua LIU²,
Lianguo CHEN², Xianqin WANG², Renai XU¹ & Jianshe MA^{3*}

¹ *The First Affiliated Hospital of Wenzhou Medical College, Wenzhou 325000, China.*

² *Analytical and Testing Center of Wenzhou Medical College, Wenzhou 325035, China.*

³ *Function Experiment Teaching Center of Wenzhou Medical College, Wenzhou 325035, China.*

SUMMARY. A sensitive and selective liquid chromatography tandem mass spectrometry (LC–MS/MS) method for determination of meropenem in rabbit plasma was developed. After addition of triazolam as internal standard (IS), protein precipitation by acetonitrile was used in sample preparation. Chromatographic separation was achieved on a Restek Allure (TM) PFP Propyl (2.1 mm × 100 mm, 5 μm) column with acetonitrile-0.1 % formic acid as mobile phase with gradient elution. Electrospray ionization (ESI) source was applied and operated in positive ion mode; multiple reaction monitoring (MRM) mode was used to quantification using target fragment ions m/z 384.1 → 339.9 for meropenem and m/z 342.7 → 307.8 for the IS. Calibration plots were linear over the range of 0.1-40 μg/mL for meropenem in plasma. Lower limit of quantification (LLOQ) for meropenem was 0.1 μg/mL. Mean recovery of meropenem from plasma was in the range 85.6 %-96.5 %. 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 meropenem in rabbit plasma.

KEY WORDS: LC-MS/MS, meropenem, pharmacokinetics, plasma

* Author to whom correspondence should be addressed. *E-mail:* jianshe160@yahoo.com.cn