



Determination of Rabeprazole in Rat Plasma by Gradient Elution LC-ESI-MS and Its Application

Yong WANG¹, Zhili WANG², Jiangang WANG¹, Xiangjun QIU^{1*}

¹ Medical College of Henan University of Science and Technology, Luoyang 471003, China.

² Henan Eye Institute & Henan Provincial Eye Hospital, Zhengzhou 450052, China.

SUMMARY. A sensitive and simple liquid chromatography/electrospray mass spectrometry (LC-ESI-MS) method for determination of rabeprazole in rat plasma using one-step protein precipitation was developed and validated. After addition of metoprolol as internal standard (IS), protein precipitation by acetonitrile was used as 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 for quantification using target fragment ions *m/z* 242 for rabeprazole and *m/z* 268 for the IS. Calibration plots were linear over the range of 5-2000 ng/mL for rabeprazole in rat plasma. Lower limit of quantification (LLOQ) for rabeprazole was 5 ng/mL. Mean recovery of rabeprazole from plasma was in the range of 82.4-88.4 %. RSD of intra-day and inter-day precision were both less than 13 %. This method is simple and sensitive enough to be used in pharmacokinetic research for determination of rabeprazole in rat plasma.

KEY WORDS: LC-MS, Rabeprazole, Rat plasma.

*Author to whom correspondence should be addressed. E-mail: luoyangxiangjun@163.com