



## Development and Validation of LC-MS/MS Method for Determination of Ondansetron in rat Plasma and its Application

Lingxia PANG <sup>1</sup>#, Qing WANG <sup>1</sup>#, Youpei WANG <sup>2</sup>, Meiqin ZHENG <sup>2</sup>, Haiya WU <sup>3</sup> & Zhiyi WANG <sup>3\*</sup>

<sup>1</sup> School of Basic Medical Sciences of Wenzhou Medical College, Wenzhou 325035, China

<sup>2</sup> The Affiliated Eye Hospital of Wenzhou Medical College, Wenzhou 325000, China

<sup>3</sup> The Second Affiliated Hospital of Wenzhou Medical College, Wenzhou 325000, China

**SUMMARY.** A selective and sensitive liquid chromatography-mass spectrometry (LC-MS) method for determination of ondansetron in rat plasma was developed and validated. After addition of midazolam as internal standard (IS), protein precipitation by acetonitrile was used as sample preparation, and chromatography involved Agilent SB-C18 column (2.1 x 150 mm, 5  $\mu$ m) using 0.1 % formic acid in water and acetonitrile as a mobile phase with gradient elution. Detection involved positive ion mode electrospray ionization (ESI), and multiple reaction monitoring (MRM) mode was used for quantification of target fragment ions m/z 294.0 $\rightarrow$ 169.7 for ondansetron and m/z 326.0 $\rightarrow$ 291.0 for midazolam (internal standard, IS). The assay was linear over the range of 5–1000 ng/mL for ondansetron, with a lower limit of quantitation (LLOQ) of 5 ng/mL for ondansetron. Intra- and inter-day precisions were less than 14 % and the accuracies were in the range of 94.7–113.5 % for ondansetron. This developed method was successfully applied for the determination of ondansetron in rat plasma for pharmacokinetic study.

**KEY WORDS:** LC-MS, Ondansetron, Pharmacokinetics, Rat plasma.

\* Author to whom correspondence should be addressed. E-mail: wangzhiyi2012@163.com

# Both authors contributed equally to this work.