



## Pharmacokinetic Study of Lobeline in Rats After Intravenous and Oral Administration

Chongliang LIN<sup>1</sup>, Fangfang HAN<sup>2</sup>, Zeng GUO<sup>3</sup> & Guanyang LIN<sup>1\*</sup>

<sup>1</sup> *The First Affiliated Hospital of Wenzhou Medical University, Wenzhou 325000, China*

<sup>2</sup> *Kaifeng County Hospital of Traditional Chinese Medicine, Kaifeng 475100, China*

<sup>3</sup> *Function Experiment Teaching Center of Wenzhou Medical University, Wenzhou 325035, China*

**SUMMARY.** Lobeline is a natural alkaloid found in “Indian tobacco” (*Lobelia inflata*), “Devil’s tobacco” (*L. tupa*), “cardinal flower” (*L. cardinalis*), “great lobelia” (*L. siphilitica*), and *Hippobroma longiflora*. However, there have been few detailed pharmacokinetic studies about lobeline on animals. The aim was to investigate the pharmacokinetic characteristics of lobeline in rats, to whom were given intravenous and oral of single doses of lobeline injection. The concentration levels of lobeline in plasma were determined with LC-MS. Various pharmacokinetic parameters were estimated from the plasma concentration versus time data using non-compartmental methods. The  $C_{\max}$  values were  $464.8 \pm 100.6$ ,  $1766.3 \pm 283.6$  and  $4448.8 \pm 1172.2$  ng/mL after the intravenous administration of single doses of 1, 5 and 10 mg of lobeline, respectively. The corresponding values of  $AUC_{0-6h}$  were  $647.5 \pm 150.2$ ,  $3194.3 \pm 436.0$ , and  $7370.0 \pm 1058.1$  ng/(mL/h), and the values of  $t_{1/2}$  were  $1.81 \pm 0.66$ ,  $1.78 \pm 0.44$ , and  $2.24 \pm 0.84$  h. The results showed that  $C_{\max}$  and  $AUC_{0-6h}$  were both linearly related to dose. The absolute bioavailability was 13.8%.

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