Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **37** (3): 529-34 (2018)

Received: January 21, 2018
Revised version: February 7, 2018
Accepted: February 8, 2018

Simultaneous Determination of Periplocymarin and its Metabolite in Rat Plasma by LC-MS/MS and their Application for Pharmacokinetics Study

Huaming LIU [1], Li LI [1], Meng WANG [1], John T. AZIETAKU [1], Huizi OUYANG [2] * & Jun HE [1] *

[1] *Tianjin State Key Laboratory of Modern Chinese Medicine, Tianjin University of Traditional Chinese Medicine, Tianjin, 300193, China*

[2] *First Teaching Hospital of Tianjin University of Traditional Chinese Medicine, Tianjin, 300193, China*

***SUMMARY*. A sensitive and selective HPLC-MS/MS method was developed and validated for the simultaneous determination of periplocymarin and its metabolite (periplogenin) in rat plasma, and using psoralen as internal standard (IS). Chromatographic separation of the analytes and IS were accomplished on a Waters CORTECSTM C18 column (2.1 × 50 mm, 2.7 μm). The detection was carried by using positive ionization mode (ESI source) with multiple reaction monitoring. Transitions for quantitation were m/z 535.3→113.1 for periplocymarin, m/z 391.3→337.2 for periplogenin and m/z 187.0→131.1 for IS. Lower limits of quantitation (LLOQ) for periplocymarin and periplogenin were 1 and 0.2 ng, respectively. The intra- and inter-day precision were lower than 12.4% and the relative errors of accuracy were from -10.5 to 7.9%. This newly developed analytical method was successfully applied to evaluate the pharmacokinetics of periplocymarin and its metabolite in rats after oral administration of periplocymarin.**

RESUMEN. Se desarrolló y validó un método sensible y selectivo de HPLC-MS/MS para la determinación simultánea de periplocymarina y su metabolito (periplogenina) en plasma de rata, utilizando psoraleno como patrón interno (IS). La separación cromatográfica de los analitos e IS se realizó en una columna Waters CORTECSTM C18 (2,1 × 50 mm, 2,7 μm). La detección se llevó a cabo utilizando el modo de ionización positiva (fuente ESI) con monitorización de reacción múltiple. Las transiciones para la cuantificación fueron m/z 535.3→113.1 para periplocymarina, m/z 391.3→337.2 para periplogenina y m/z 187.0→131.1 para IS. Los límites más bajos de cuantificación (LLOQ) para periplocymarina y periplogenina fueron 1 y 0.2 ng, respectivamente. La precisión intra- e interdía fue inferior al 12.4% y los errores relativos de precisión fueron de -10.5 a 7.9%. Este método analítico recientemente desarrollado se aplicó con éxito para evaluar la farmacocinética de la periplocymarina y su metabolito en ratas después de la administración oral de periplocymarina.

KEY WORDS: Cortex Periplocae, LC-MS/MS, periplocymarin, periplogenin, pharmacokinetics.

* Authors to whom correspondence should be addressed. *E-mails:* hejun673@163.com (J. He), huihui851025@163.com (H. Ouyang).

ISSN 0326 2383 (printed ed.)
ISSN 2362-3853 (on line ed.)