



Simultaneous Quantification of Schisandrin, Deoxyschisandrin and Schisandrin B in Rat Bile, Urine, and Feces and Application to Excretion Study

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SUMMARY. An accurate, precise and sensitive method for simultaneous quantification of schisandrin, deoxyschisandrin and schisandrin B in rat bile, urine, and feces using HPLC-ESI-MS was developed. The results showed that the calibration curves for schisandrin, deoxyschisandrin and schisandrin B were linear in bile over the range of 0.372-18.6, 0.0122-0.608 and 0.0278-1.39 $\mu\text{g/mL}$ and in urine and feces both from 0.0465-2.79, 0.0015-0.0912 and 0.0035-0.209 $\mu\text{g/mL}$. The precision and accuracy was verified to be sensitive and accurate and the extraction recoveries were also acceptable. The validated method was successfully applied to excretion study of schisandrin, deoxyschisandrin and schisandrin B in rats after oral administration of *Schisandra chinensis* extract. The results indicated that the majority of the three lignans were metabolized and only the minority were excreted in native forms (unmetabolized) via bile, urine and feces.

RESUMEN. Se desarrolló un método de HPLC-ESI-MS seguro, preciso y sensible para la cuantificación simultánea de esquisandrina, deoxiesquisandrina y esquisandrina B en bilis, orina y heces de ratas. Los resultados demostraron que las curvas de calibración fueron lineales dentro del rango de 0,372-18,6, 0,0122-0,608 y 0,0278-1,39 $\mu\text{g/mL}$ en bilis y lo propio ocurrió en orina y heces dentro del rango de 0,0465-2,79, 0,0015-0,0912 y 0,0035-0,209 $\mu\text{g/mL}$. El método demostró ser sensible y seguro y la recuperación de las extracciones fueron igualmente aceptables. El método validado fue exitosamente aplicado al estudio de excreción de esquisandrina, deoxiesquisandrina y esquisandrina B en ratas luego de la administración oral del extracto de *Schisandra chinensis*. Los resultados indicaron que la mayoría de los tres lignanos fueron metabolizados y solamente la menor parte excretados en sus formas nativas (no metabolizados) por vía biliar, orina y heces.

KEY WORDS: Deoxyschisandrin, Excretion, *Schisandra chinensis*, Schisandrin, Schisandrin B.

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