



Pharmacokinetics Study of Glucuronidated Daphnoretin in Rat Plasma

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SUMMARY. A simple and accurate method based on high performance liquid chromatography was developed for quantification of glucuronidated daphnoretin in rat plasma. After intragastric administration to rats at the doses of 50, 100, and 200 mg/kg, plasma obtained at each time point (0.5, 1, 2, 4, 6, 8, 10, 12, 16, 24, 36, and 48 h) was hydrolyzed with β -glucuronidase and then extracted by ethylacetate after deproteinization with acetonitrile. Samples were separated using a Diamonsil C18 (200 mm \times 4.6mm, 5 μ m) with methanol-0.1% phosphoric acid (42:58, v/v) as mobile phase and detected at 345 nm. Psoralen was used as internal standard. The pharmacokinetics parameters is as followed: The C_{max} of 50, 100, and 200 mg/kg were 534.3, 1160.8, and 2202.0 ng/mL; the T_{max} were 6.3, 6.8, and 6.0 h; the $T_{1/2}$ were 14.1, 14.2, and 13.1h; the $AUC_{0-\infty}$ were 8624.8, 17733.0, and 30597.3 ng-h/mL, respectively. Glucuronidated daphnoretin appeared to be a linear pharmacokinetic character after intragastric administration to the rat.

RESUMEN. Se ha desarrollado un método simple y preciso de cromatografía líquida de alto rendimiento para la cuantificación de daphnoretina glucuronizada en plasma de rata. Después de la administración intragástrica a ratas de dosis de 50, 100 y 200 mg/kg, el plasma obtenido en cada punto (0,5, 1, 2, 4, 6, 8, 10, 12, 16, 24, 36 y 48 h) se hidrolizó con β -glucuronidasa y después se extrajo con acetato de etilo luego de la desproteinización con acetonitrilo. Para la separación cromatográfica de las muestras se usó una columna DIAMON SIL C18 (200 mm \times 4,6 mm, 5 micras) con metanol-0.1 % de ácido fosfórico (42:58, v/v) como fase móvil y la detección se hizo a 345 nm, usando psoraleno como estándar interno. Los parámetros farmacocinéticos de 50, 100 y 200 mg /kg fueron los siguientes: $C_{máx}$ 534,3, 1160,8 y 2202,0 ng/mL, $T_{máx}$ 6,3, 6,8 y 6,0 h, $T_{1/2}$ 14,1, 14,2 y 13,1 h, $AUC_{0-\infty}$ 8624,8, 17733,0 y 30597,3 ng.h/mL, respectivamente. La daphnoretina glucuronizada parece tener un carácter farmacocinético lineal luego de la administración intragástrica a ratas.

KEY WORDS: Daphnoretin, Glucuronidation, HPLC, Pharmacokinetic

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