Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **30** (3): 507-13 (2011)

Original Article

Received: July 29, 2010
Accepted: August 8, 2010

Gradient HPLC-DAD Determination and Pharmacokinetic Study of *Ginkgo biloba* Extract in Rabbits

Xiao LIU [2], Daoquan TANG [1,2], *, Jing WU [2], Xiaoxing YIN [1,2], Yuanyuan GAO [1], Xianglan JIANG [1,2] , Dongzhi YANG [1,2]

[1] *Department of Pharmaceutical Analysis, Xuzhou Medical College, Xuzhou Jiangsu 221004, China*
[2] *Key Laboratory of New Drug & Clinical Application, Xuzhou Medical College, Xuzhou Jiangsu 221004, China*

SUMMARY. **HPLC-DAD was used and validated for the simultaneous determination of five flavonoids (rutin, quercitrin, quercetin, kaempferol and isorahamnetin) in rabbit plasma. Chromatographic separation was performed on an Aglient Zorbax SB-C18 column (5 μm particle size, 250 mm × 4.6 mm i.d.) maintained at 35 ºC. The mobile phase was a mixture of methanol and 0.1 % formic acid water solution with a step linear gradient. At 1.0 ml/min flow rate, the eluent of five flavonoids were detected simultaneously at 350 nm with good separation. For all the analytes, the correlation coefficients for all the calibration plots (r > 0.999) showed good linearity over the range tested. The method was validated for precision, stability, accuracy, and selectivity. The validated method has been successfully applied to determine drug concentrations in plasma samples from rabbit that had been intravenously administrated *Ginkgo biloba* extract. The main pharmacokinetic parameters of rutin, quercitrin, quercetin, kaempferol and isorahamnetin in rabbit after intravenously administration of 80 mg/kg EGb were as follows, t1/2: (2.134 ± 0.594), (3.408 ± 0.917), (1.919 ± 0.62), (1.171 ± 0.261), (1.829 ± 1.756) h; $AUC_{0-\infty}$: (3.661 ± 0.518), (1.584 ± 0.17), (9.951 ± 1.253), (1.002 ± 0.164), (0.373 ± 0.037) $\mu g \cdot h \cdot L^{-1}$; $MRT_{(0-t)}$: (0.929 ± 0.132), (1.256 ± 0.038), (1.174 ± 0.065), (0.989 ± 0.099), (1.041 ± 0.117) h; Cl: (5.559 ± 0.814), (12.743 ± 1.304), (2.034 ± 0.224), (20.382 ± 3.165), (54.068 ± 5.474) L/h·kg.**

KEY WORDS: Ginkgo biloba extract, High performance liquid chromatography, Pharmacokinetics.

* Author to whom correspondence should be addressed. *E-mail:* tdq993@hotmail.com