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

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**SUMMARY.** HPLC-DAD was used and validated for the simultaneous determination of five flavonoids (rutin, quercitrin, quercetin, kaempferol and isorhamnetin) in rabbit plasma. Chromatographic separation was performed on an Agilent Zorbax SB-C18 column (5 μm particle size, 250 mm × 4.6 mm i.d.) maintained at 35 °C. 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 isorhamnetin 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-infinity): (3.661 ± 0.518), (1.584 ± 0.17), (9.951 ± 1.253), (1.002 ± 0.164), (0.373 ± 0.037) μg·h·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.

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