



Determination of Puerarin in Rat Plasma by HPLC with Fluorescence Detection and its Application to Pharmacokinetic Studies

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SUMMARY. A simple, rapid, sensitive and selective method of high-performance liquid chromatography with fluorescence detection was developed for determination of puerarin in rat plasma. Chromatography was carried out on a reversed-phase Hypersil ODS column at 30 °C using a mobile phase consisting of methanol - 50 mM NH₄OAc in water (23:77, v/v) with a flow rate of 1 mL/min. The excitation wavelength and emission wavelength were 250nm and 480nm, respectively, PMT-gain was set at 11. The method was demonstrated to be selective and sensitive, and a good linear response was observed over a range of 0.16–120.00 µg/mL in rat plasma. The validated method was successfully applied to the characterization of the pharmacokinetics of puerarin in rat plasma after intravenous administration to rats. The main pharmacokinetic parameters were as follows: AUC_{0→t} 41.94 ± 12.90 (mg/L·h), AUC_{0→∞} 44.37 ± 28.90 (mg/L·h), MRT 0.97 ± 0.37 (h), T_{1/2} 1.06 ± 0.39 (h), V_{ss} 0.09 ± 0.02 (L), V_z 0.14 ± 0.03 (L), Cl 0.10 ± 0.05 (L/h).

KEY WORDS: Fluorescence detection, HPLC, Rats, Pharmacokinetics, Puerarin.

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