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A Simple HPLC Method for Determination Tobramycin in Plasma and Its Application in the Study of Pharmacokinetics in Rats

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***SUMMARY*. A simple HPLC method was developed to study the pharmacokinetics of tobramycin in rat after intravenous administration. The plasma samples were deproteinized with acetonitrile after addition of the internal standard, netilmicin. The separation was achieved on a reversed-phase C18 column after derivatization with 9-fluorenylmethyl chloroformate (FMOC-Cl) in borate buffer (0.2 M, pH 6.5) for 15 min at 25 ºC. The mobile phase was water-acetonitrile (6:94, v/v) at a flow rate of 1.0 mL/min. The fluorescence excitation and emission wavelengths were 265 and 315 nm, respectively. The method was linear over the range of 0.12-10.48 μg/mL for tobramycin in plasma. The limit of detection was 0.074 μg/mL. The intra-day and inter-day precisions of tobramycin were both less than 6%. Both derivatives were stable in the reaction solution for 24 h at room temperature. This assay had been successfully applied to the in vivo kinetic study of tobramycin in rats.**

KEY WORDS: 9-fluorenylmerthyl chloroformate, High-performance liquid chromatography, Pharmacokinetic study, Tobramycin.

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