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This study was conducted to investigate the pharmacokinetic characteristics of a synthetic opioid, Tridol?Capsule (tramadol hydrochloride from Yuhan Pharmaceutical Co., Ltd., Korea) in 24 healthy Korean volunteers after a single dose administration. The volunteers received two capsules of 50 mg dose. Plasma samples were obtained over a 24-hour interval, and tramadol concentrations were determined by validated HPLC methods with a fluorescence detector. From the plasma tramadol concentration vs. time curves, the areas under the plasma concentration curves of tramadol (AUC) were 2731 ± 1210 ng h/ml and peak serum concentrations of 321.6 ± 123.6 ng/ml were reached 2.3 h after oral administration of two Tridol capsules. The half-lives of absorption were 0.80 ± 0.68 h and the lag-time 0.14 ± 0.12 h. In the terminal phase the biological half-lives of tramadol were 6.6 ± 2.2 h.

[PE2-21] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Identification of urinary metabolite(s) of CKD-712 by gas chromatography/mass spectrometry in rats

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Examination was made of the urinary metabolite(s) of CKD-712, which is a chiral compound, named S-YS49 derived from higenamine (one component of *Aconite spp.*) derivatives. First of all, to analyze the metabolite(s) of CKD-712, a simple and sensitive detection method for CKD-712 was developed by using gas chromatography-mass spectrometry(GC/MS). Urine was collected from adult male Sprague-Dawley rats(250±10g) in metabolic cage for 24hr after oral administration of 100 mg/kg of CKD-712. The recovery of CKD-712 after extraction and concentration with AD-2 resin column was above 90 % from rat urine. The detection limits of CKD-712 in urine was approximately 0.1 ng/mL. It has well been suggested that isoquinoline possessing catechol moiety such as CKD-712 should be subjected to the catechol-O-methyl transferase activity in vivo. We detected three major peaks of presumed CKD-712 metabolites in the total ion chromatogram obtained from the rat urine sample after oral administration of CKD-712. From these results, it is assumed that the urinary metabolites are mono-methylation in the naphthyl moiety (metabolite I), methylation at the C-6 or 7 hydroxy group in the isoquinoline moiety and hydroxylation at in the naphthyl moiety (metabolite II), and methylation at the C-6 or 7 hydroxy group in the isoquinoline moiety (metabolite III).

[PE2-22] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Kinetic behavior of sophoricoside by gas chromatography/mass spectrometry in rats

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Sophoricoside was isolated as the inhibitor of IL-5 bioactivity from *Sophora japonica* (Leguminosae). To develope as novel anti-allergic drug, kinetic study was performed in rats. Serum concentration of sophoricoside was measured by gas chromatography-mass spectrometry (GC/MS) in male Sprague-Dawley rat (250±10g, n=5) after oral administration of sophoricoside (100mg/kg). The recovery of sophoricoside after extraction and concentration was above 95 % from rat serum. Between-day precision(relative standard deviation 2.2-2.8%) and within-day precision(2.0-12.1%) were determined from replicate analysis of a spiked control and incurred serum sample. The detection limits of sophoricoside in this serum was approximately 0.1 ng/mL. The Pharmacokinetic parameters were derived from the noncompartmental analysis. The C_{max}(3.56±0.34 ㎍/mL) value for sophoricoside in male rat was observed at 7.6 h. The elimination half-life($t_{1/2}$) of sophoricoside was approximately 4.47 h, the mean residence time (MRT) averaged 10.75 h, the total body clearance (Cl) averaged 0.0042 mL/min/kg. and the area under the serum concentration-time curve ($AUC_{0-\infty}$) was 24.93 ㎍·hr/mL.

[PE2-23] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Studies on the Standard Protocols of Bioequivalence Test

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After beginning the new medical system separating the prescription from the drug dispensary, the demand of bioequivalence test significantly increases to show the equivalence between the test and reference drugs as a result of amendment of the pharmaceutical affairs law which allows a generic substitution. Accordingly the standard protocols provided by the government are required for reducing the period and the cost to perform the bioequivalence study. As a result of the requirement, this paper provides standard protocols of bioequivalence tests for 11 drugs, composed of 6 protocols based on the documents submitted to KFDA and 5 protocols based on the US pharmacopeia. Standard protocols which are completed by this study are Nabumetone, Doxazosin mesylate, Azelastine hydrochloride, Eperisone hydrochloride, Terazosin hydrochloride, Terbinafine hydrochloride, Dichlofenac sodium, Diltiazem hydrochloride, Captopril, Piroxicam, and Hydroxychloroquine sulfate.

Poster Presentations - Field E3. Physical Pharmacy

[PE3-1] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Synthesis and characterization of transferrin-polyethylenimine conjugate for targeted gene delivery

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