formation was initiated from the periphery to the center of the defect and no adverse inflammatory reaction was observed. These microgranules also have potential as drug delivery systems to accelerate bone healing and cell proliferation.

## Poster Presentations - Field E2. Pharmacokinetics

[PE2-1] [ 04/18/2003 (Fri) 09:30 - 12:30 / Hall P ]

### Bioavailability of tolperisone in human plasma using a simple HPLC.

Jeong Ji Hoon°, Park Joon Hong, Choi Tae Sik, Lee Dong Kyu, Jung Chan Heon, Son Byung Hyuk, Sohn Uy Dong

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We aimed at determining bioavailability of tolperisone, a musle relaxant, and developing a simple analysis in human blood using HPLC. A rapid and snsitive HPLC method was developed and validated using reverse-phase C18 column with retention time and limit of quantification of toferisone being 7.3 min and 20 ng/ml, respectively. Quantification was performed at 260 nm with chlorphenesin as internal standard. The method involved a simple extraction. In order to study blood level profile in time, eight volunteers were enrolled and orally took 450 mg tolperisone once. The blood sample were collleted from 0 to 9 h after the drug administration. Mean AUC and Cmax value were 556.31±359.2473 (ng/ml·hr) and 353.96±163.5683 (ng/ml), respectively. And Mean Tmax and T1/2 value were 0.94±0.42 (hr) and 1.14±0.27 (hr). From the results we determine the bioavailability of toferison using a newly developed and useful HPLC method.

[PE2-2] [ 04/18/2003 (Fri) 09:30 - 12:30 / Hall P ]

### A Simple and Rapid Determination of Theophylline in Human Serum by High-Performance Liquid Chromatography and its Application to Pharmacokinetics of Theophylline in Volunteers

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A simple and rapid method for the determination of theophylline (THP) in human serum was developed by a high performance liquid chromatography/UV detector and applied to pharmacokinetic study of THP in human volunteers. β-Hydroxyethyltheophylline as internal standard was added to 200 ㎕ of human serum and the mixture was centrifuged at 13000 rpm for 10 min. The supernatant was transferred to Ultrafree-MC centrifugal filter units (0.22 ㎛) and centrifuged at 1500 rpm for 3 min. 10 ㎕ of the filtrate was injected to the HPLC system. Kromasil $C_{18}$ (4.6 mm x 150 mm, 5 μm) column and acetonitrile/10 mM acetate buffer (8: 92, v/v%) as

mobile phase were selected for the assay. THP showed good resolutions with no significant interfering peaks observed. The quantitation limit is 0.1 μg/ml. A good linearity (r>0.9999) was obtained in the range of 0.1 - 15 μg/ml of THP. Intra-day accuracy and precision (CV%) were below +14.8% and 17.0%, and inter-day accuracy and precision were below +15.3% and 14.5%, respectively. The developed method was applied to the pharmacokinetic study of THP after oral administration of THP (260 mg) to 8 healthy human volunteers. The principle pharmacokinetic parameters resulted in 122.7 ± 38.1 μg·hr/ml of $AUC_{0\rightarrow 24hr}$, 7.6 ± 1.4 μg/ml of $C_{max}$, 3.1 ± 0.8 hr of $T_{max}$, 0.0766 ± 0.0279 $hr^{-1}$ of $K_e$, and 10.1 ± 3.6 hr of $t_{1/2}$. (This study was supported by a grant from Korea Food and Drug Adminstration).

[PE2-3] [ 04/18/2003 (Fri) 09:30 - 12:30 / Hall P ]

## Determination of Levofloaxcin in Human Serum by High-Performance Liquid Chromatography/Diode Array Detector and its Application to Pharmacokinetics of Levofloxacin in Volunteers

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A simple, specific and sensitive method for the determination of levofloaxcin (LFX) in human serum was developed by a high performance liquid chromatography/diode array detector and applied to pharmacokinetic study of LFX in human volunteers. This method involves several steps such as precipitation with acetonitrile, extraction with methylene chloride, evaporation, and concentration, using 0.5 ml of the serum. Symmetry Shield RP18 (3.9 mm x 150 mm, 5 μm) column and 0.3% triethylamine/acetonitrile (90: 10, v/v%) as mobile phase were selected for the assay. LFX and internal standard enoxacin showed good resolutions and no significant interfering peaks were observed. The quantitation limit is 0.2 μg/ml. A good linearity (r>0.9990) was obtained in the range of 0.1 - 4.0 μg/ml of LFX. intra-day accuracy and precision (CV%) were below +6.9% and 10.3%, and inter-day accuracy and precision were below +3.9% and 8.9%, respectively. The developed method was applied on the pharmacokinetic study of LFX after oral administration of LFX (200 mg) to 8 healthy human volunteers. The principle pharmacokinetic parameters resulted in 14.5 ± 3.4 μg·hr/ml of $AUC_{0\rightarrow 24hr}$, 2.5 ± 0.7 μg/ml of $C_{max}$, 1.1 ± 0.6 hr of $T_{max}$, 0.1014 ± 0.0074 $hr^{-1}$ of $K_e$, and 6.9 ± 0.57 hr of $t_{1/2}$. (This study was supported by a grant from Korea Food and Drug Adminstration).

[PE2-4] [ 04/18/2003 (Fri) 09:30 - 12:30 / Hall P ]

## Bioavailability of chlorphenesin carbamate in human plasma using a simple HPLC.

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We aimed at determining bioavailability of chlorphenesin carbamate, a musle relaxant, and developing a simple analysis in human blood using HPLC. A rapid and sensitive HPLC method was developed and validated using reverse-phase C18 column with retention time and limit of quantification of toferisone being 8.6 min and 0.5 ng/ml, respectively. Quantification was