

[OD4-1] [ 2004-10-22 14:30 - 14:45 / Room 205 ]

### **Enantioseparation of Profens in Tablets and Patches as Diastereomeric (R)-(+)-1-phenylethylamide derivative by Achiral Gas Chromatography**

**Man-Jeong Paik**<sup>o</sup>, Duc-Toan Nguyen, Youngmie Choi, Inseon Cho, Sunmie Lee, Kyoung-Rae Kim

*College of Pharmacy, Sungkyunkwan University, Suwon 440-746, South Korea*

The antiinflammatory activities of nonsteroidal antiinflammatory drugs of 2-arylpropionic acid type are mainly ascribed to (S)-enantiomers. However, they are mostly marketed as racemic mixtures. In this study, the optical purity tests on (S)-ibuprofen in tablets and the enantiomeric composition tests on flurbiprofen and ketoprofen in patches and urine excretions following each topical application were performed indirectly by achiral gas chromatography as diastereomeric (R)-(+)-1-phenylethylamide derivatives. When applied to seven different commercial (S)-ibuprofen products after method validation, their optical purities (98.7 ~ 99.1%) were measured with good precision (% RSD  $\leq$  4.0). And when applied to flurbiprofen patch of one brand and ketoprofen patches of five different brands after method validation, their enantiomeric compositions were found to be racemic, and % (R)-(+)-enantiomers of flurbiprofen ( $65.6 \pm 0.9$ ) and ketoprofen ( $53.5 \pm 0.9$ ) in urine were present at higher levels as compared to those antipodes (49.75 ~ 50.17%) in patches, while % (S)-(+)-enantiomer of flurbiprofen ( $34.4 \pm 0.9$ ) and ketoprofen ( $46.5 \pm 0.9$ ) in urine were lowered when compared with those (49.83 ~ 50.25%) in patches. The present enantioseparation method is expected to be useful for quality assurance of active profen developments and their stereospecific metabolism study.

[OD4-2] [ 2004-10-22 14:45 - 15:00 / Room 205 ]

### **Method Development for Simultaneous Profiling Analysis of Amines and Phenols as Ethoxycarbonylated Pentafluoropropionyl Derivatives by Gas Chromatography and its Clinical Applications**

**Youngmie Choi**<sup>1o</sup>, Man-Jeong Paik<sup>1</sup>, Sunmie Lee<sup>1</sup>, DoWon Kuon<sup>2</sup>, Kyoung-Rae Kim<sup>1</sup>

*1 College of Pharmacy, Sungkyunkwan University, Suwon 440-746, South Korea, 2 Jaesun Acupuncture Clinic and Daunting Cancer Research Institute*

An efficient method for simultaneous profiling of amines and phenols was developed. The 20 phenolic compounds in acidic solution (pH 2) were first ethoxycarbonylated with subsequent alkalization (pH 12) for ethoxycarbonylation (EOC) of 30 amines. The resulting EOC derivatives were recovered by solid-phase