

[PD4-1] [ 04/21/2000 (Fri) 14:50 – 15:50 / [1st Fl, Bldg 3] ]

### Cyanomethyl and tri-Methylsilyl Derivatives for the Analysis of Plasma Free Fatty Acid by GC-NPD

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Analysis of free fatty acid is of critical clinical importance for the diagnosis of inherited fatty acid oxidation disorder. We developed a new derivatization method for the simultaneous analysis of plasma free fatty acids and 3-hydroxy fatty acids by gas chromatography-nitrogen phosphorus detector (GC-NPD). Two hundreds microliter of plasma is extracted with ethylacetate, and then derivatized with cyanomethylation for carboxyl group and tri-methylsilylation (TMS) for hydroxyl group, consecutively. The optimum reaction time examined is 30 min and 20 min at 60°C for cyanomethylation and TMS, respectively. The mean recoveries of saturated and unsaturated fatty acids (C8-C18) ranged from 90 % and 96 % with SD of 7 % while that of 3-hydroxy fatty acids averaged as 88 % with SD of 8 %. This result proved the potential of future application for the diagnosis of mitochondrial fatty acid oxidation disorders.

[PD4-2] [ 04/21/2000 (Fri) 14:50 – 15:50 / [1st Fl, Bldg 3] ]

### Determination of retinol in pharmaceutical preparations

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A simple and rapid determination of retinol from various pharmaceuticals containing retinol derivatives were described. Pretreatments and HPLC conditions depend on the kind of retinols and dosage forms. Retinol derivatives were decomposed to retinol with KOH, which were determined by HPLC. Dissolved sample with alcoholic KOH and after 10-20 minutes, acidified and filtered. The amount of retinol could be determined with this method from any pharmaceutical preparation of retinol derivatives. Treating time of KOH, acidic reagents and HPLC conditions were investigated for the best stability and recovery of retinol.

[PD4-3] [ 04/21/2000 (Fri) 14:50 – 15:50 / [1st Fl, Bldg 3] ]

### Anti-diabetic Effect of 7-Cinnamoyl Chrysin

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The derivative of 7-cinnamoyl chrysin was synthesized by condensing cinnamic acid with chrysin in organic solvent, and its structure was identified by NMR, MS, UV, IR etc. We also investigated the physico-chemical properties, anti-diabetic effect, and set up the quantitative analysis method of the compound. The correlation coefficient of calibration curve on this compound was approximately 0.9989 at the isobestic point (355nm) by absorption spectrophotometry. Detection limit is 1.1ng at S/N=3 by using a RP column. 7-cinnamoyl chrysin has hypoglycemic effect of 7.4% in inhibition rate.