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This study was carried out to investigate the 115 kinds of pesticide residues in agricultural products, 3644 samples, in the northern area of Seoul from March in 1999 to August in 2000. The detection rate of pesticide residues was 5.0% (181 of 3644 samples). The order of the agricultural products in which pesticide residues were detected was korean lettuce> perilla leaf> green pepper> korean cabbage> leek> spinach> cucumber> leafy radish. The percentage of the agricultural products in excess of MRL was 1.9% (70 of 3644 samples). The agricultural products in excess of MRL were perilla leaf(14 cases), korean lettuce(12 cases), spinach(6 cases), green pepper(5 cases), etc.

The order of the pesticide residues which were detected in agricultural products was procymidone, endosulfan, chlorpyrifos, vinclozolin and pyrazophos. the average residual values(mg/kg) of procymidone, endosulfan, vinclozolin, chlorpyrifos and pyrazophos were 2.203, 1.027, 1.729, 1.111 and 0.775, respectively. The pesticide residues in excess of MRL were chlorpyrifos (19 cases), endosulfan (10 cases), procymidone (8 cases), vinclozolin (6 cases), pyrazophos (4 cases), etc. and the measured concentration ranges of chlorpyrifos, endosulfan, procymidone, vinclozolin, chlorothalonil, diazinon, and EPN were 0.009~6.723, 2.3~5.8, 2.0~30.8, 1.7~20.33, 10.7~21.7, 0.5~4.3, 0.28~4.19, respectively.

[PD4-23] [10/19/2000 (Thr) 15:00 - 16:00 / [Hall B]]

The analysis of retinol derivatives in cosmetics by HPLC

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This study was carried out to determine retinol derivatives in domestic and imported cosmetics. Experimental subjects were 34 cosmetics which contained cream, cleanser, lotion, liquid and packs.

The obtained results were as follows:

1. The analytical method was applied with HPLC system of μ -Bondapak C18 column with mobile phase, 100% methanol at 325nm.
2. The calibration curve showed good linearities having r value of 0.9998, 0.9999 and 0.9997, at the range of standard concentrations: retinol(3.4~344.2), retinyl acetate(2.2~109.0) and retinyl palmitate(7.5~422.4)unit/ml were used as standards. These compounds were successfully separated on the retention time 4.6, 5.4 and 17.3 respectively.
3. The recovery was obtained as $98.3 \pm 2.3\%$ (RSD:2.34), $93.7 \pm 2.3\%$ (RSD:2.47) and $103.2 \pm 3.6\%$ (RSD:3.52) respectively from the spiked preparations.
4. Samples were extracted as two ways: 100% methanol only(method I) and mixture of methanol and chloroform(95:5, method II). Target component in samples was determined as the range of amount 510.9~194019.9 and 502.5~197976.7(unit/g) respectively except four samples.

[PE1-1] [10/19/2000 (Thr) 15:00 - 16:00 / [Hall B]]

The influence of terpenes on the in vitro permeation of prostaglandin E1 through hairless mouse skin

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PGE1 has been paid attention as a remedy of impotence by the improvement of blood flow. For the transdermal delivery, we investigated terpenes as penetration enhancer in comparison to oleic acid and lauryl alcohol and their mechanism in the transdermal delivery of PGE1. The terpenes included (S)-(+)-carvone, cineol, eugenol, (R)-(+)-limonene, L-(-)-menthol, menthone, nerolidol at 5%w/v concentrations in 50% ethanol. The penetration rate of PGE1 across excised hairless mouse skin was experimented using Keshary-Chien diffusion cell at 37°C. Fourier transform infrared (FT-IR) spectroscopy, differential scanning calorimetry (DSC) and cholesterol solubility test studies were undertaken to investigate the effect of enhancers on the biophysical properties of the stratum corneum in order to understand the mechanism of percutaneous absorption enhancement of PGE1 by terpenes. The results of permeation studies suggest the eugenol should be the effective penetration enhancer in the delivery of PGE1. In addition, FT-IR results indicate that most terpenes, especially limonene and menthol caused the lipid extraction and DSC data show eugenol and oleic acid clearly increased the average lipid acyl chain disorder of treated sample. The cineol among terpenes has the best cholesterol solubility. The eugenol is found to have an influence on the lipid matrix of the stratum corneum the most significantly.

[PE1-2] [10/19/2000 (Thr) 15:00 – 16:00 / [Hall B]]

Controlled release of mefenamic acid(MFA) from MFA-solid dispersion system-hollow type suppository inserted polyvinyl alcohol hydrogel capsule

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Solid dispersion system of mefenamic acid, a model poorly water-soluble drug with povidone(K-30) was prepared by the solvent method to improve its solubility. A marked increase in the dissolution rate of mefenamic acid was attained by solid dispersion system. Hollow type suppositories inserted polyvinyl alcohol(PVA) hydrogel capsule were prepared using Witepsol H-15 as a base to improve the controlled release of drug. Mefenamic acid was loaded in both hydrogel capsule and suppository base. The hollow type suppositories with capsule significantly retarded release rate of drug as compared with hollow type suppositories without capsule and conventional suppositories. When the suppositories loaded with mefenamic acid in both hydrogel capsule and base were administered to rats, controlled release of drug was observed from the plasma concentration-time profile. These suppositories showed the enhancement of both AUC and MRT of drug compared with those of control suppositories. The application of the hollow type suppositories inserted PVA hydrogel capsule might be beneficial to not only water-soluble drug but poorly water-soluble drug in the controlled rectal delivery of drug.

[PE1-3] [10/19/2000 (Thr) 15:00 – 16:00 / [Hall B]]

in vivo Evaluation of Ketoprofen-Monostearin Pharmacosome

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Ketoprofen, a potent analgesic non-steroidal anti-inflammatory drug, is effective in the treatment