a model system was prepared by a solvent extraction/evaporation method. The leuprolide-loaded PLGA microsphere was dissolved by acetonitrile containing 0.1% TFA, and then content of leuprolide in the microsphere was directly determined by MALDI-TOF MS using alpha-cyano-4-hydroxy cinnamic acid as a matrix. Triptorelin was used as an internal standard. The relative peak height of leuprolide was calculated and plotted versus its contents. This plot showed linearity between 5 and 500 ug/mL of leuprolide and the precision was found to be in the range of 0.3 to 2.3% relative standard deviation. The results were compared to the data determined by capillary electrophoresis and HPLC. This new approach was found to be sensitive, convenient, and reliable. It is expected to be applied to various related studies including stability, peptide/protein-polymer interaction, and in vitro release study. It also provides the merits of speed, high resolution, small sample requirements, ease of determination, and simple data manipulations over other analytical tools.

[PE1-23] [04/19/2001 (Thr) 15:30 - 16:30 / Hall 4]

Stability study of PEGylated Salmon Calcitonin

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PEGylation of salmon calcitonin (sCT) has been studied to improve the bioavailability by increasing the stability of sCT. PEGylated sCT was obtained by conjugation with succinimidyl carbonate-polyethylene glycol (sc-mPEG, m.w. 5,000). Mono- and di-PEGylated sCTs were separated by GFC and showed molecular ion peaks at m/z 8339 and m/z 13274 by MALDI-TOF/MS. Mono-PEGylated sCTs were further separated into three positional isomers (M1-M3) by RP-HPLC. By LC-MS/MS analysis of tryptic digests, PEGylated sites of three isomers were identified. That is, the position of PEGylation in M1, M2 and M3 was Cys1, Lys18 and Lys11 of sCT, respectively. HPLC-UV analysis of the degradation of mono-PEGylated sCTs and sCT showed that mono-PEGylated sCTs were chemically more stable than sCT and M1 was the most stable among three mono-PEGylated sCTs. The metabolic stability study of sCT and N-terminus modified mono-PEGylated sCT using purified lysosomal enzymes, cathepsin B1 and D indicated that mono-PEGylated sCT, M1 was more stable than sCT against purified lysosomal enzymes.

[PE1-24] [04/19/2001 (Thr) 15:30 - 16:30 / Hall 4]

Preparation and Evaluation of Prostaglandin E1 (PGE1) Intraurethral Solutions for Erectile Dysfunction

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Preparation and Evaluation of Prostaglandin E1 (PGE1) Intraurethral Solutions for Erectile Dysfunction. Byoung-Ju Park*, Seung-Ho Lee, Qi-Zhe Quan, Han-Gon Choi, Jong Dal Rhee and Chul Soon Yong.

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Purpose. To prepare and evaluate PGE1 intraurethral solutions. Methods. PGE1 intraurethral solutions were prepared with polyethyleneglycol 400, propylene glycol monolaurate, and benzyl alcohol. The stability of PGE1 in intraurethral solution was investigated using a validated HPLC technique. In pentobarbital anesthetized wild cats, increases in intracavernous pressure(ICP), penile length and duration of erectile response were determined after application of PGE1 intraurethral solution. For the possible urethral mucous irritation, histological examinations were also performed. Results. It was found that PGE1 intraurethral solution was stable over 1 yr at 4℃. ICP of intraurethral solution(83.7± 15.2mmHg) was less than that of intracavernosal injection 1g of PGE1(102.5±17.7mmHg) as control.