of itraconazole-loaded microspheres were 16.18~25.74㎛. In morphology studies, bupivacaine-loaded microspheres showed an irregular shape and had a rough surface.

[PE1-18] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

In Vitro Evaluation of Three Positional Isomers of mono-PEGylated Salmon Calcitonin

Jung JY°, Youn YS, Oh SH, Hong ST, Lee JE, Lee SD, Lee KC

Drug Targeting Laboratory, SungKyunKwan University

Salmon calcitonin (sCT) is a therapeutic polypeptide hormone consisting of 32 amino acids (3432 Da). As with other bioactive peptide therapeutics, however, therapeutic use of sCT has been limited due to the problems of short circulating half-life and rapid proteolytic degradation. To get over this problem, the three positional isomers of mono-PEGylated sCT were prepared and among these, the best drug candiate for nasal application was chosen. sCT was conjugated with monomethoxy polyethylene glycol succinimidyl propionate (mPEG-SPA) 2K via covalent linkage. Three positional isomers of mono-PEGylated sCT were directly separated by reversed-phase column and the PEGylation sites of each isomer were identified by endoprteinase Lys-C digestion followed by MALDI-TOF mass spectrometry. To select the best candidtate, the In vitro biological activity in T47D human breast cancer cell line, the stability against various nasal enzymes and nasal membrane permeability in RPMI 2650 human nasal epithelial cell monolayer of three positional isomer were investigated. The findings of this study indicate that Lys18-residue modified mono-PEGylated sCT which has increased stability, preserved bioactivity, and enhanced membrane permeability would be the best drug candidate for therpeutic application via nasal route.

[PE1-19] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Encapsulation of Plasmid DNA in Liposomes: Preparation and Characterization

Park HyoMin°, Lee HwaJeong

College of Pharmacy, Ewha Womans University 11-1 Daehyun-dong, Seodaemun-gu, Seoul 120-750, Korea

Unlike cationic liposome/DNA complexes, neutral liposomes containing plasmid DNA are stable in blood and does not selectively entrapped in the lung. The objective of this study was to construct neutral liposomes containing plasmid DNA with optimal encapsulation efficiency. Plasmid DNA (pGL2 clone 753, ~ 6 kb) was encapsulated by the freeze/thawing method into liposomes composed of 1-palmitoyl-2-oleyl-sn-glycerol-3-phosphocholine (POPC), didodecyldimethylammonium bromide (DDAB), distearoylphosphatidyl-ethanolamine polyethylene glycol 2000 (DSPE-PEG 2000) and DSPE-PEG 2000-maleimide. The liposomes containing plasmid DNA were then extruded through two stacked polycarbonate filters with series of different pore sizes to obtain a narrow size distribution of the particles. The plasmid DNA entrapped in the liposomes was separated from free plasmid DNA by Sephadex CL-4B column chromatography. The encapsulation efficiency was markedly affected by the cationic lipid (DDAB) concentration, but to a low degree by the size of liposomes and by the amount of plasmid DNA.

[PE1-20] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]