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

POLYMERIC DEVICES FOR THE CONTROLLED DELIVERY OF CEFADROXIL

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In order to develop a novel implantable polymeric device that prevents bacterial adhesion and biofilm formation, we fabricated and investigated various antibiotic-loaded polymeric formulations using non-biodegradable polymer, polyurethane (PU), and biodegradable polymers, polycaprolactone (PCL), poly (DL-lactide-co-glycolide)[50:50] copolymer (PLGA) . In order to optimize the formulation for controlling the release property of cefadroxil from the polymeric devices, we examined the various factors, particle size and loading dose of pore former, molecular weight and solvent fraction of polymers. Cefadroxil was incorporated into PU, PCL and PLGA polymers by solvent casting and freeze-drying using several pore formers, especially BSA. The release of cefadroxil from three polymeric devices increased as increasing the fraction and particle sizes of the BSA/cefadroxil mixtures. Changing the weight fraction and particle size of the BSA/cefadroxil mixtures could control the release of cefadroxil from the matrix. The release of cefadroxil-loaded these polymeric matrices without the pore former was more sustained and lower than that of BSA/cefadroxil mixtures. The release of cefadroxil from PCL increased as decreasing average molecular weight of polymer and increasing the solvent fraction of polymer solution. The weight of PLGA matrix began to decrease since 30days and pH of IPB solution decreased as weight loss increase. For duration of antibacterial activity, in vivo was longer than in vitro and Cefadroxil-loaded these polymeric matrices without the pore former were sustained for more than 10days. SEM studies confirmed the results of release properties in release studies.

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

Preparation and evaluation of the glutaraldehyde crosslinking chitosan microspheres containing cefaclor

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Chitosan microspheres were prepared by glutaraldehyde crosslinking of an aqueous acetic acid dispersion of chitosan containing cefaclor in liquid paraffin stabilized using span80 as a surfactant. The morphological characteristics were examined using a scanning electron microscope(SEM). Drug incorporation efficiencies of the microspheres were variable(16.4-36.9%) depending on the preparation conditions. In vitro release of the drug in simulated gastric and intestinal fluids at 37℃ was affected by the crosslinking density, particle size and initial drug loading in the microspheres. Drug release was retarded by increasing glutaraldehyde concentration and crosslinking time. On the other hand, using high initial drug loading and surfactant concentration showed a high drug release.

[PE1-17] [10/19/2000 (Thr) 15:00 - 16:00 / [Hall B]]

Development of bioadhesive gels for enhanced local anesthetic effects

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In relieving local pains, lidocaine, procaine, tetracaine, ester type local anesthetics, has been