such as diphenyl hydrantoin (phenytoin) and diphenyl dimethyl dicarboxylate (DDB) based on the molecular interaction between drug and additives during pharmaceutical processing to be related with the bioavailability behavior. Here, the characterization on molecular interaction present drug and additives occurred during grinding pharmaceutical process was mainly measured using particle size analyzer. It was confirmed based on The data from in vitro test for bioavailability of solubility and dissolution rate is that the solubility data of ground samples could be improved by decreasing the particle size of ground samples and the solubility of nano□sized particle by a nanomizer was significantly enhanced higher than intact DDB.

[PE1-4] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

The Study of Stability of Oral Pharmaceutical Liquid Preparation Ⅱ

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The available period of oral pharmaceutical liquid preparations was decided according to the study of the stability of unopened preparations. But if one reuses the drug after opening the sealed cap , the major components of the drug could change in quality. In addition, there isn't any accurate information about the available period of opened oral pharmaceutical liquid preparations. In this study, a long term test, an accelerated test and a microbial limit test are run with C (pseudoephedrine and triprolidine), D (ibuprofen) that are marketed and used frequently . Sample products are stored as the state of CLOSE (store it as initial marketed form, unopened) and the state of C/O (open and close cap regularly after opening it) .The results from above two states are analyzed comparing with each other. The active substances of each product are assayed by HPLC method described in compendial monographs. In the long term test, there wasn't any significant change of active substances until 4 months. Syrups stored in each condition in the long term test didn't show any significant change in physical testing of pH, color, and odor. But in accelerated test, the change of active substances is greater than that in the long term test and is proportional to temperature. In the microbial limit test , any bacteria and fungi have not been observed until 3 months.

[PE1-5] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Poly(l-lactide) membranes with biomimetic nanolayer for bone induction for tissue regeneration

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The healing of a bone defect is complex, and involves a wide range of cellular, molecular, physiological, and biological processes. The main effect of bone substitute is to promote wound healing by induce cell proliferation.Bone defect sites usually are localized below the original bone surface; therefore, space production and maintenance between the membrane and the original bone surface is essential. As a result, membranes must have proper mechanical strength to prevent the collapse of the soft tissue and maintain wound space that permits bone growth. In addition, biodegrability is further required to avoid second retrieval surgery. In our study, porous membranes of poly (L-lactide) (PLLA) were fabricated to provide and maintain sufficient space for bone growth. Collagen, gelatin, chitosan have been widely used as biomaterials, and these may be attractants for osteoblasts wound repair. In this work, the focus was on the nanofibers or nanopariticles of collagen, gelatin and chitosan modified PLLA membranes by electrospinning method, and to investigate their effects on the physico-chemical and biological property of the materials.

[PE1-6] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Intravenous and Intra-arterial Delivery of Plasmid DNA/Cationic Lipiodol Emulsion

Complexes

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A cationic lipid emulsion (o/w) containing lipiodol and 1, 2-dioleoyl-sn-glycero-3-trimethylammonium-propane (DOTAP) has been prepared as a gene delivery system. In order to increase the transfection efficiency of the lipiodol emulsion, 1, 2-dioleoyl-sn-glycero-3-phospho -ethanolamine (DOPE) and polyoxyethylene sorbitan monooleate (Tween 80) were incorporated as additional lipids. By including DOPE and Tween 80, the cationic emulsion became a more potent gene carrier under in vitro condition in the presence of serum, and under in vivo condition. The role of protamine sulfate on cationic lipid emulsion-mediated gene transfer was also tested. The particle size and the zeta potential of the lipiodol emulsion as well as the DNA/Carrier complexes were examined in order to evaluate the physical stability. The particle size of the DOTAP/DOPE/Tween 80 emulsion was 71 nm, and this particle was more stable than those in the DOTAP emulsion in PBS with or without serum. When the DOTAP/DOPE/Tween 80 emulsion was combined with DNA, the size and the zeta potential of the complex were 220~300 nm and +30mV, respectively. The DNA /Emulsion/Protamine sulfate complex delivered DNA effectively to spleen through a single intravenous injection in mice. The feasibility study of DNA/Carrier complexes as a local injection carrier was performed by injecting the complex via hepatic artery of rabbit VX2 tumor model. When the DNA/Emulsion (DOTAP/DOPE/Tween 80) complex was administrated to hepatic artery, DNA was localized at the tumor site more specifically when compared with the DNA/Emulsion (DOTAP) complex.

[PE1-7] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Enhanced Stability of Acetyl-L-Carnitine Tablet under Accelerated Storage Condition

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Acetyl-L-carnitine (ALC), an endogenous component of L-Carnitine, is the acetyl ester of carnitine that has been reported to be beneficial in depressive disorders and Alzheimer's disease.ALC is so hygroscopic that deliquescence took place when it absorbed moisture by 15%(w/w) in a week and then reached steady-state at 45%(w/w) in 40℃, 75% RH storage condition. Therefore it is necessary to prevent ALC from absorbing atmospheric moisture.For this purpose, we chose hydroxypropylmethylcellulose phthalate (HPMCP), an enteric polymer, as a film former. After two weeks' storage under 40℃, 75% RH without a package, HPMCP-coated ALC tablet absorbed moisture only below 20%(w/w), while control product, Nicetyl? tablet coated with cellulose acetate phthalate (CAP) represented moisture absorption up to 32%(w/w).This result demonstrated that HPMCP could be much more effective to protect the ALC tablets against moisture under severely humid circumstances as well as to reduce the cost for tight moisture-proof package.

[PE1-8] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Electrospun poly (lactic-co-glycolic acid)(PLGA) nanoparticles for controlled drug delivery system

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In many biodegradable polymers recently investigated, poly(lactic acid)(PLA) or poly(lactic-co-glycolic acid)(PLGA) have extensively been utilized as drug delivery systems for sustained release drug delivery. Recently, there has been increased interest in electrospinning, which can produce fibers that are sub-micron in diameter. This technique has been applied to various micro/nano fabrication areas using numerous polymers but