of osteoarthritis, rheumatoid arthritis and the associated arthritic disorders. However, it exhibits gastrointestinal side effect associated with all NSAIDs.
Pharmacosome, which facilitates membrane transfer and improves bioavailability. can be defined as a colloidal dispersion of drugs covalently bound to lipids.
KT-pharmacosome(ketoprofen-monostearin pharmacosome) was synthesized from ketoprofen and monostearin.
This thesis evaluates the bioavailability and the ulcerogenic activity of KT-pharmacosome.
KT-pharmacosome was administrated intravenously, orally and intramuscularly to rat and the pharmacokinetic parameters were compared. In addition, ulcerogenic activity was observed.
Compared with the application of ketoprofen, KT-pharmacosome significantly increased the Cmax AUC and bioavailability of oral administration. After oral administration of ketoprofen and KT-pharmacosome, the average number of ulcer index was investigated. KT-pharmacosome was 0.6 times less irritating to the gastric mucosa than ketoprofen.
This thesis confirms ketoprofen-monostearin pharmacosome formulation improves the bioavailability and reduces the gastrointestinal side effect.

[PE1-4] [10/19/2000 (Thr) 15:00 - 16:00 / [Hall B]]

ME-based Hydrogel Containing Lidocaine for Premature Ejaculation

Shin Hyun Woo°, Lee Gi Bong, Lee Sang Kil, Yang Sung Un, Woo Hye Seung, Choi Young Wook

College of Pharmacy, Chung-Ang University

Several topical preparations containing lidocaine, a widely used local anesthetic agent, have been developed and marketed recently for the treatment of premature ejaculation. In this study, microemulsion(ME)-based hydrogels containing lidocaine were prepared by dispersing ME to hydrogel bases such as carbomer gel, sodium alginate gel, and sodium carboxymethylcellulose gel. Lidocaine-containing ME was thermodynamically stable and has a diameter ranging from 10 to 100nm. In vitro skin permeation of lidocaine from ME-based hydrogels followed apparent zero-order kinetics. ME-based hydrogel showed higher drug permeation during fifteen minutes compared with alcoholic hydrogel, reference preparation. On the other hand, tail flick test in rats was introduced to compare in vivo local anesthetic effects of different hydrogels, showing the superior results with ME-based hydrogel. In optical microscopy observation, recrystallization of lidocaine was observed within 5min after application of reference hydrogel, but there was no change in ME-based hydrogels even after 30min. This result indicated that ME-based hydrogels had some advantages of the increased skin penetration, controlled release and physical stability compared with alcoholic hydrogels. Finally it is possible to conclude that ME-based hydrogels containing lidocaine could be a good topical delivery system for the treatment of premature ejaculation.

[PE1-5] [10/19/2000 (Thr) 15:00 - 16:00 / [Hall B]]

Synthesis and in vitro Evaluation of Ketoprofen -Monostearin Pharmacosome

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College of Pharmacy, Ewha Womans University, *Department of Medical Device & Radiation Health, KFDA

Pharmacosome can be defined as a colloidal dispersion of drugs covalently bound to lipids and may exist as ultrafine vesicular, micellar or hexagonal aggregates of the drug-lipid complex. Such compound can be a strongly amphiphilic molecule, which facilitates membrane transfer and improves bioavailability. The approach of the pharmacosome can make avoid the problems of the drug incorporation into the liposome, the drug leakage from the carrier and the insufficient shelf stability.

To prepare the pharmacosome, drug-lipid complex was synthesized from ketoprofen and monostearin using active titanium catalysts. Fine particle was prepared by homogenization of melted ketoprofen-monostearin complex dispersed in aqueous solution.
In vitro dissolution experiments showed that dissolution rate of KT-pharmacosome is 2-fold higher than that of ketoprofen in pH 1.2, 5.5, and 6.8 dissolution media. Dissolution profiles of ketoprofen were different in various dissolution media. On the other hand, KT-pharmacosome demonstrated similar dissolution profiles except in pH 1.2 dissolution medium.

[PE1-6] [10/19/2000 (Thr) 15:00 - 16:00 / [Hall B]]

ME-based Hydrogel Containing Lidocaine for Premature Ejaculation

Shin HW°, Lee GB, Lee SK, Yang SU, Woo HS, Choi YW

College of Pharmacy, Chung-Ang University, ‡Gu Ju Pharm. co., Ltd.

Several topical preparations containing lidocaine, a widely used local anesthetic agent, have been developed and marketed recently for the treatment of premature ejaculation. In this study, microemulsion(ME)-based hydrogels containing lidocaine were prepared by dispersing ME to hydrogel bases such as carbomer gel, sodium alginate gel, and sodium carboxymethylcellulose gel. Lidocaine-containing ME was thermodynamically stable and has a diameter ranging from 10 to 100nm. In vitro skin permeation of lidocaine from ME-based hydrogels followed apparent zero-order kinetics. ME-based hydrogel showed higher drug permeation during fifteen minutes compared with alcoholic hydrogel, reference preparation. On the other hand, tail flick test in rats was introduced to compare in vivo local anesthetic effects of different hydrogels, showing the superior results with ME-based hydrogel. In optical microscopy, recrystallization of lidocaine was observed within 5min after application of reference hydrogel, but there was no change in ME-based hydrogels even after 30min. These results indicated that ME-based hydrogels had some advantages of the increased skin penetration, controlled release and physical stability compared with alcoholic hydrogels. Finally it is possible to conclude that ME-based hydrogels containing lidocaine could be a good topical delivery system for the treatment of premature ejaculation.

[PE1-7] [10/19/2000 (Thr) 15:00 - 16:00 / [Hall B]]

Synthesis, physiochemical characterisation study of pluronic -PLL graft copolymer for gene transfer agents

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The cationic copolymers for DNA delivery were synthesized by conjugating PEO-PPO-PEO (pluronic) with poly-*L*-lysine(PLL). Pluronic partially functionalized with 4-nitrophenyl carbonate groups was obtained by reaction of pluronic with 4-nitrophenyl chloroformate. Free amine group of PLL was bound to pluronic activated with 4-nitrophenyl carbonate group in carbonate buffer.

The structural analysis of pluronic-g-PLL was carried out using FT-IR, H^1-NMR measurment and fluorescamine assay. The physical characterization of graft copolymer was measured by zeta-potential
and electron microscopy. Potential for using pluronic-g-PLL as a non-viral
gene delivery vector will be elucidated.

[PE1-8] [10/19/2000 (Thr) 15:00 - 16:00 / [Hall B]]