PEG 600, PEG 900, and PEG 1500 were studied. The results show that PEGs decreased the flux of AAP and thus the electroosmotic flow. This decrease in flux (electroosmotic flow) was larger as the molecular weight of PEG increased.

[PE1-24] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Effect of Vehicles and Penetration Enhancers on the Percutaneous Absorption of Ketorolac Tromethamine across Hairless Mouse Skin

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The effects of vehicles and penetration enhancers on the in vitro permeation of ketorolac tromethamine (KT) across excised hairless mouse skins were investigated. Among pure vehicles examined, propylene glycol monolaurate (PGML) showed the highest permeation flux, which was 94.3±17.3 mg/cm^2/hr. Even though propylene glycol monocaprylate (PGMC) alone did not show high permeation rate, the skin permeability of KT was markedly increased by the addition of diethylene glycol monoethyl ether (DGME); the enhancement factors were 19.0 and 17.1 at 20 and 40 % of DGME, respectively. When DGME was added to PGML, the permeation fluxes were almost two times at 20-60% of DGME compared to PGMC alone. The combination of propylene glycol and oleyl alcohol enhanced the permeation fluxes dramatically compared to PG alone; however it failed to show significant enhancing effects compared to oleyl alcohol. In the study to investigate the effect of drug concentration on the permeation rate of KT, four pure vehicles (DGME, PGMC, PGML, isopropyl alcohol) and two binary co-solvents (DGME-PGMC, DGME-PGML) were employed. The permeation rates increased as the drug concentration increased in all vehicles used, and the dramatic increase in permeation rate was obtained when the drug concentration was higher than its solubility. For the effects of fatty acids on the permeation of KT, five fatty acids were added to propylene glycol (PG) at the concentrations of 1, 3, 5 and 10%-caprylic acid, capric acid, lauric acid, oleic acid, and linoleic acid. The penetration fluxes generally increased as the fatty acid concentration increased. The highest enhancing effect was attained with 10% of caprylic acid in PG; the permeation flux was 113.6 ± 17.5 mg/cm^2/hr. The lag time of KT was reduced as the concentration of fatty acids decreased except for caprylic acid.

[PE1-25] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Ultra-fine Grinding Mechanism of Pharmaceutical Additive by Stirred Ball Mill - Consideration of particle size distribution on ground nano-particle

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Recently, the need for ultra-fine particles, especially nano-sized particles has increased in the fields preparing raw powders such as pharmaceutical additive and high value added products in the Nano-Technology processes. Therefore, the research in ultra-fine grinding is very important, especially, in nanometer grinding. In the previous paper, a series of wet grinding experiments using grinding aids using a stirred ball mill have been performed on grinding rate constant based on grinding kinetics. In this study, firstly the relationship between the change of median diameter of products and the specific grinding consumption energy was discussed with the experimental factors such as the grinding ball size and the concentration of grinding aids using pharmaceutical additive powders such as $CaCO_3$ by the wet grinding process in a stirred ball mill. Secondly the production rate below particle size could be expressed as an exponential of un-ground fraction based on the rate process and the effect of above experimental factors on the grinding rate constant had examined with the change of particle size distribution of nano-particle size products.

[PE1-26] [2003-10-11 09:00 - 12:30 / Grand Ballroom Pre-function]

Investigation of transport of PEGylated salmon calcitonin through caco-2 cell monolayers

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