

polymers; polyoxyethylenes (PEO), and polyacrylates (carbopol), each of those were produced changing the concentration of coating solutions (1, 3, 5, and 7%). In this work, we coated sugar core with drug loaded HPMC polymer and adhesive polymers in water-based fluidized bed coating method. Studies for the evaluation of release of the drug from the beads and bioadhesive force were carried out. Bioadhesion force was determined by using a texture analyzer. The beads had spherical shape and the surface of the beads was smooth. The size of the beads was about 500–800 μm . The beads are expected to be more useful for treatment of buccal ulcers than Aftach, because the beads can cover the ulcer site completely. It is apparent from the plots the drug release could be sustained almost approaching zero-order kinetic and was governed by the concentration of the mucoadhesive polymers. In all these cases, the rate of drug release was increased when the mucoadhesive polymers were coated at low concentrations, but was decreased when coated with at high concentrations. As for the beads coated with the hydrophilic adhesive polymers, the bioadhesiveness appeared to increase with a corresponding increase in the hydrophilic polymer content. After taking into consideration both drug-release and the bioadhesive properties, the beads coated with 7% PEO appeared to be the most suitable formulation for buccal ulcerative therapy.

[PE1-6] [04/18/2003 (Fri) 09:30 – 12:30 / Hall P]

Electroosmosis in skin during iontophoresis: effect of pH, current density and ionic strength

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At pH 7.4 (physiological pH), skin is permselective to cations, due to the net negative charge of the current passing channels (pores) in skin. This causes the convective solvent flow (electroosmotic flow) from anode to cathodal direction. In this work, we have investigated several factors (pH, current density and ionic strength) that can affect the electroosmotic flow. As a marker molecule for the direction and magnitude of electroosmotic flow, acetaminophen, a neutral molecule, was used. Experiments were performed using phosphate buffer and side-by-side diffusion cell. Constant current was applied to the Ag/AgCl electrode. The concentration of acetaminophen in the receptor compartment was determined by HPLC. Results showed that the direction of electroosmotic flow was reversed as the pH of the buffer solution was changed from pH 7.4 to 3.0. The magnitude of electroosmotic flow increased as the current density increased at pH 7.4. However, at pH 3.0, electroosmotic flow was higher at lower current density. Ionic strength also affected the electroosmotic flow. These results provide further mechanistic insights into the role of electroosmotic flow in transdermal flux of drugs.

[PE1-7] [04/18/2003 (Fri) 09:30 – 12:30 / Hall P]

Tyrosinase inhibitory effect of gentisic acid derivatives

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Gentisic acid, a skin-whitening agent, is known to possess tyrosinase inhibition activity. In order to develop an effective skin-whitening agent, hydroquinone derivatives in which the carboxylic acid moiety of gentisic acid was replaced with various functional groups, were selected and evaluated for their ability to inhibit tyrosinase activity as well as to inhibit melanin release.