

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

### Swelling and Drug Release Behavior of Tablets Coated with Aqueous Hydroxypropyl Methylcellulose Phthalate (HPMCP) Nanoparticles

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Organic solvent-based enteric coating technology using hydroxypropyl methylcellulose phthalate (HPMCP) has been developed for many years due to low water solubility of HPMCP. In this work, aqueous HPMCP nanoparticles (HPMCP-NPs) were prepared by neutralization emulsification method using HPMCP powder and ammonium hydroxide (NH<sub>4</sub>OH) in the absence of any organic solvent and emulsifier. Tablets for enteric usage were coated with HPMCP-NP dispersions having different degree of neutralization, which was manipulated by ion exchange process. Disintegration and dissolution behavior of coated tablets were investigated using UV-visible spectrophotometer based on USP method (pH 1.2 and at 37°C) and simulated in intestinal fluid (pH 6.8 and at 37°C for 60min), respectively. The ion exchange process directly achieved by the protonation of dissociated carboxylic acid group of the aqueous HPMCP-NPs was introduced as a useful way to control the release rate of drug and hydrophobic nature of HPMCP coating layer with a view for pharmaceutical application. The drug release and swelling increased as conductivity of aqueous HPMCP-NPs increased. On the other hand, particle size and polydispersity decreases as degree of neutralization increased.

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### Effect of *Acanthopanax koreanum* on D-galactosamine and lipopolysaccharide-induced fulminant hepatitis

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The roots and rhizome of *Acanthopanax koreanum* are used as folk medicine to ameliorate hepatitis in Korea. The ability of *A. koreanum* to protect mice from fulminant hepatitis induced in mice by D-galactosamine and lipopolysaccharide was evaluated. Preparations of *A. koreanum* used were an ethanol extract, a water extract, and the ethanol-soluble and ethanol-insoluble components of the water extract. Rats were pretreated with extract by intraperitoneal injection or orally, 12 h and 1 h before intraperitoneal injection of D-galactosamine and lipopolysaccharide. Intraperitoneal pretreatment with the water extract or the ethanol-insoluble component of the water extract markedly reduced the elevated levels of alanine aminotransferase (ALT), aspartate aminotransferase (AST) and tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ), reduced the histological changes in the liver, and attenuated hepatocyte apoptosis confirmed by the terminal deoxynucleotidyl transferase-mediated dUTP nick end-labeling method and DNA fragmentation assay. Oral pretreatment with the ethanol-insoluble component of the water extract also reduced serum AST, ALT and TNF- $\alpha$  levels. The present study shows that the ethanol-insoluble component of a water extract from *A. koreanum* has a protective effect against the induction of fulminant hepatitis in mice by D-galactosamine and lipopolysaccharide.