[Powder Technol., **76**, 57-64 (1993)] [Lab. of Pharm. Engineering]

Micromeritic characteristics and agglomeration mechanisms in the spherical crystallization of bucillamine by the spherical agglomeration and the emulsion solvent diffusion methods.

KENJI MORISHIMA, YOICHI KAWASHIMA, YOSHIAKI KAWASHIMA*,
HIROFUMI TAKEUCHI, TOSHIYUKI NIWA, TOMOAKI HINO

The physical properties of bucillamine were modified by the application of two spherical crystallization techniques - the spherical agglomeration and emulsion solvent diffusion methods. The mechanisms of spherical agglomeration and crystallization were investigated. In the spherical agglomeration method, the microcrystalline drug precipitates were aggregated via liquid bridges of dichloromethane liberated from the crystallization solvent system. The growth rates were mainly determined by the amount of dichloromethane formulated.

[YAKUZAIGAKU, **53**, 44-54 (1993)] [Lab. of Pharm. Engineering]

Drug Release from Water-in-Oil-in-Water Multiple Emulsions In Vitro. Effects of the Addition of Hydrophilic Surfactants to the Internal Aqueous Compartment on the Release Rate of Water-soluble Drug.

TAKAYUKI OHWAKI, MASAHIRO NAKAMURA, HIROSHI OSAWA, YOSHIAKI KAWASHIMA*,
TOMOAKI HINO, HIROFUMI TAKEUCHI, TOSHIYUKI NIWA

In order to assess the effects of the addition of hydrophilic surfactants to the internal aqueous compartment on the release rate of new coccine from the w/o/w emulsion droplets, the artificial membrane permeation tests were conducted to compare with emulsions without additives (control), and with emulsions containing sodium chloride. The amount of new coccine that permeated through an artificial membrane from the donor cell to the receptor cell was suppressed by the addition of sodium chloride or sodium alkylsulfonate.

[Int. J. Pharm., **99**, 229-238 (1993)] [Lab. of Pharm. Engineering]

Preparation of prolonged-release matrix tablet of acetaminophen with pulverized low-substituted hydroxypropylcellulose via wet granulation.

YOSHIAKI KAWASHIMA*, HIROFUMI TAKEUCHI, TOMOAKI HINO, TOSHIYUKI NIWA,
TZU-LANG LIN, FUJIO SEKIGAWA, MASAYO OHYA

Pulverized L-HPC (low-substituted hydroxypropylcellulose, LH41) can be used as a prolonged-release matrix filler. LH41 powders with or without acetaminophen were granulated with ethanol or water to improve their micromeritic properties for practical tabletting by using a high-speed agitator, centrifugal fluidizing granulator or spray dryer. The water-granulated LH41 tablet was readily crushed under mechanical stress and rapidly disintegrated in water, resulting in rapid drug release. The ethanol-granulated LH41 provided a mechanically strong matrix tablet in which the drug was dispersed uniformly, resulting in prolonged drug release in water without disintegration.