

[Chem. Pharm. Bull., 42(9), 1954-1956 (1994)]

[Lab. of Pharm. Engineering]

**MUCOADHESION OF POLYMER-COATED LIPOSOMES TO RAT
INTESTINE *IN VITRO*.**HIROFUMI TAKEUCHI, HIROMITSU YAMAMOTO, TOSHIYUKI NIWA,
TOMOAKI HINO, YOSHIAKI KAWASHIMA*

Multilamellar liposomes consisting of dipalmitoyl phosphatidylcholine (DPPC) and dicetyl phosphate (DCP) in a molar ratio of 8:2 (DPPC:DCP=8:2) were coated with three different types of polymer: chitosan, polyvinyl alcohol having a long alkyl chain, and poly(acrylic acid) bearing cholesterol. The existence of polymer layers on the liposome surface was confirmed by measuring the zeta potential of the liposomal particles. The mucoadhesive function of the polymer-coated liposomes was evaluated *in vitro* using rat intestine. A particle counting method using the Coulter counter was adopted to evaluate the adhesive % of liposomes. Chitosan coated liposomes showed the highest adhesive % was observed for the non-coated liposomes.

[Int. J. Pharm., 105, 11-18 (1994)]

[Lab. of Pharm. Engineering]

**Tabletting properties of buccillamine agglomerates
prepared by the spherical crystallization technique.**KENJI MORISHIMA, YOSHIAKI KAWASHIMA*, HIROFUMI TAKEUCHI,
TOSHIYUKI NIWA, TOMOAKI HINO, YOICHI KAWASHIMA

The tabletting properties of buccillamine agglomerates prepared by two spherical crystallization techniques, i.e., a spherically agglomeration method and an emulsion solvent diffusion method, were investigated. The flow and packing properties of agglomerates, represented in terms of the angle of repose and change in tapping density, were much improved by this technique compared with those of conventional crystals due to the spherical shape and smooth surface.

[Powder Technol., 78, 151-157 (1994)]

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**Improvements in flowability and compressibility of pharmaceutical
crystals for direct tabletting by spherical crystallization with a
two-solvent system.**YOSHIAKI KAWASHIMA*, FUDE CUI, HIROFUMI TAKEUCHI, TOSHIYUKI NIWA,
TOMOAKI HINO, KATSUMI KIUCHI

Pharmaceutical crystals for direct tabletting were agglomerated by the spherical crystallization technique with a two-solvent system, i.e. good and poor solvents for dissolving the drug, to improve their micromeritic properties, such as flowability, packability and compressibility. Flowability and packability of the agglomerates were investigated by measuring tapped densities and interparticle frictions when sheared.