〔Drug Delivery System, 4, 100 (1989)〕

**Drug release rate in vitro and bioavailability of new controlled release suspension of spherical matrix of ibuprofen.**

YOSHIAKI KAWASHIMA* TARO IWAMOTO, TOSHIYUKI NIWA,
HIROFUMI TAKEUCHI, TOMOAKI HINO, SHIGEHISA FURUYAMA

The drug release behavior and bioavailability of newly developed controlled release suspensions of ibuprofen were investigated. The suspension was prepared by suspending spherical matrices (particle diameter 350-800 μm) of the drug with acrylic polymer in aqueous media containing sodium carboxymethylcellulose ane D-sorbitol whose pH was adjusted below 3.0. The drug release behavior of suspension precisely followed to that of original spherical matrix, suggesting little leakage of the drug from the suspended matrices during storage.

〔Drug Develop. Ind. Pharm., **15**, 1999 (1989)〕

**Controlled Release Theophylline Tablet with Acrylic Polymers Prepared by Spray-Drying Technique in Aqueous System.**

HIROFUMI TAKEUCHI, TETSUROU HANDA, YOSHIAKI KAWASHIMA*

Sustained release and enteric theophylline tablets were prepared by directly compressing spray-dried microspheres with Eudragits L30D, L100-55 and E30D. The spray-drying process was free from using organic solvent. Drug dissolution of the enteric tablet in an acidic solution (pH 1.2) was highly dependent on the polymer content of the microsphere. Completely enteric function was observed with drug-to-polymer ratio of 1 : 3 using Eudragit L30D or L100-55. Tablet with Eudragit E30D formulated at the 2-40% level showed good sustained drug release which was throughly independent of the pH of dissolution media. The dissolution pattern was similar to that of Theodur and gave a straight line in Higuchi plot.

〔Powder Technol., **58**, 259 (1989)〕

**Characterization of Die Wall Pressure to Predict Capping of Flat- or Convex-Faced Drug Tablets of Various Sizes,**

K. SUGIMORI, S. MORI, Y. KAWASHIMA*

Die wall pressure during compaction of drug powders was measured to elucidate the mechanisms involved in capping. More than 200 kg/cm$^2$ of die wall pressure remained after decomprssion, whereas in the case of capping, the die wall pressure rapidly dropped at the final stage of the decompression process. These results suggested that capping was the fracture of compacted powders caused by high residual die wall pressure.

The extrapolated residual die wall pressure of convex-faced tablets was higher than that of flat-faced ones. For the convex-faced tablets, the thinner ones indicated a higher residual die wall perssure.