

[Pharm. Acta Helv., 60, 345 (1985)]

**Kinetics Studies on the Stability of Indomethacin in Alkaline Aqueous Solution Containing Poly(oxyethylene)poly(oxypropylene) Surface-active Block Copolymers.**

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The kinetics of alkaline hydrolysis of indomethacin in the absence and presence of the three types of Pluronics(F-68, F-88, F-108) at various temperatures (25, 30, 37, 45°C) were investigated. The pseudo-first order rate constants were observed whether in the absence or presence of Pluronics. The value of  $k_{obs}$  were significantly decreased with the increase of Pluronics concentration and decreased in the order of F-108 < F-88 < F-68. Experimental temperature also plays an important role in the degradation kinetics. Since micellar solubilization was responsible for protection from degradation, the apparent stability constant of the indomethacin-micelle complex was derived from a double reciprocal plot.

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**The Effects of Thickness and Hardness of the Coating Film on the Drug Release Rate of Theophylline Granules Coated with Chitosan-Sodium Tripolyphosphate Complex.**

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The drug release from theophylline granules coated with chitosan-sodium tripolyphosphate complex followed zero-order kinetics after an induction period, which depended on the swelling of the granules during the dissolution. The swelling was greater in the acidic medium than in the alkaline one, resulting in an increase of the drug release rate. A linear correlation between the drug release rate and the reciprocal of coating film thickness was found. By hardening the coating film with glutaraldehyde, the swelling of the granules was reduced and the drug release rate was decreased.

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**Preparation of a Prolonged Release Tablet of Aspirin with Chitosan.**

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A prolonged release tablet of aspirin was prepared by compressing aspirin agglomerated by massing with an acetic acid solution of chitosan. The parameters controlling the drug release rate were the chitosan content in the tablet, the physical state of chitosan used for granulation i.e. liquid solution or gel, and the pH of the dissolution test solution. When the chitosan solution was used for agglomeration, the drug release rate of the resultant tablet was faster than when the gel was used. The drug release became more prolonged with increasing chitosan content in the tablet or with decreasing pH of the dissolution test solution.