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Kumar M, Dureja H. Development and characterization of factorially designed 5-fluorouracil microspheres. *Bull. Pharm. Res.* 2011;1(1):54-61.

Abstract: Microspheres of 5-fluorouracil were prepared for prolonged or controlled drug delivery, to improve bioavailability/stability and to target drug to specific sites. 5-Fluorouracil was encapsulated with eudragit RL 100 and ethyl cellulose using an *o/o* emulsion solvent evaporation method. Factorial design was used to study the effect of stirring speed, stirring time and phase ratio on cumulative percent of drug release. It was found that cumulative percent of drug release increases at the high level of stirring speed, stirring time and phase ratio. The effect was highest in case of stirring speed and lowest in case of phase ratio. Microspheres (batch MA-5) were characterized by spherical shape, absence of aggregates, a mean diameter of 107.92±1.12 *µ*m, a recovery of 78.82±1.26% (*w/w*) and an encapsulation efficiency of 76.78±1.19% (*w/w*). ANOVA was applied on cumulative percent of drug release to study the fitting and significance of model. The estimated model may be further utilized as response surface for cumulative percent of drug release of 5-FU microspheres.

Key words: Eudragit RL 100, 5-Fluorouracil, Ethyl cellulose, Solvent evaporation method, Microspheres.

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