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# Study of Nimesulide Release From Ethylcellulose Microparticles and Drug-Polymer Compatibility Analysis

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**SUMMARY. The aim of this study was to formulate ethyl cellulose (EC) microparticles for sustained release of nimesulide and study the effect of processing variables, drug to polymer ratio and also study the drug polymer compatibility. The microparticles were prepared by coacervation (temperature change) technique. Physical properties, such as particle size, entrapment efficiency, release pattern and morphological characteristics were investigated by in vitro dissolution, SEM, FTIR, XRD, DSC and TGA in order to optimize the formulation of the microparticles. With the increase of polymer concentration there was an increase in size and drug entrapment efficiency of microparticles. There was a decrease in size and non-linear change in entrapment efficiency with the increase of stirring speed and time. The release of drug from microparticles was anomalous diffusion. It was confirmed that there is no strong chemical interaction between drug and polymer except the change in crystal habit and polymorphism. Ethyl cellulose microparticles containing nimesulide are suitable for controlled release devising.**

*KEY WORDS:* Ethyl cellulose, Microparticles, Nimesulide, Polymer ratio, Processing variables.

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