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Design Development and Evaluation of Ibuprofen Loaded Nanosponges for Topical Application

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Abstract : The main perspective of study was to formulate ibuprofen loaded nanosponges for topical application. Emulsion solvent diffusion method was selected to prepare ibuprofen loaded nanosponges using different ratios of drug:polymer. The obtained nanosponges have been evaluated for physicochemical characteristics and *in vitro* release studies. The shape and morphology of drug loaded nanosponges were investigated and confirmed by SEM. FTIR results were in agreement with standard spectral studies and moreover it was identified that there was no interaction between drug and polymer. Entrapment efficiency of the NS was found to be around 70.41%. The production yield and *in vitro* release studies was also good. Overall this study resulted in porous nature of nanosponges which provides a channel for the release of the drug and the method is quick and reproducible.

Key words : Ibuprofen, Ethyl cellulose, Poly vinyl alcohol, nanosponges.

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