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Hydrophilic and Hydrophobic Polymer Based Naproxen Buccal Mucoadhesive Film: Design and *In Vitro* Evaluation

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SUMMARY. The aim of the present study was to develop a sustained release mucoadhesive buccal film of naproxen, which can be used to treat the inflammation in the oral cavity. The mucoadhesive buccal films were prepared by solvent casting method. The prepared films were evaluated for their physicochemical parameters and *in vitro* release pattern. All the formulations showed uniform weight, thickness, content uniformity and folding endurance. Surface pH was found to be compatible with salivary pH. Na-CMC and HPMC based films (F-3 and F-1) showed highest water uptake (80 and 72% at 4 h) and weight loss (33.40 and 38.48%) as well as ex vivo residence time (270 and 230 min, respectively). Mucoadhesive strength was found to be decreased with the incorporation of hydrophilic polymers. Highest sustained release up to 4 h was found for F-3 (43.56%, MDT 3.941 h) and then for F-1 (69.26%, MDT 3.342 h).

KEY WORDS: Buccal mucoadhesive film, Ethyl cellulose, HPMC, Naproxen, Na-CMC.

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