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Assessment of Dikka Malli gum as a matrix forming material in design and evaluation of sustained drug delivery system

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In recent years, polymers those are derived from plant origin have evoked fantastic interest because of their various pharmaceutical applications such as diluents, binder, disintegrant in tablets, thickeners in oral liquids, protective colloids in suspensions, gelling agents in gels, and bases in suppository. They are also used in cosmetics, paints, textiles, and paper making. These natural gums and mucilages are preferred over the synthetic ones because they are biocompatible, cheap, and easily available than the synthetic ones. Also the natural excipients are preferred on the synthetic and semi synthetic ones because of their lack of toxicity, low cost, soothing action, availability, and nonirritant nature of the excipient.

The major objectives of the investigation are as follows.

- To study the applicability of natural gum as excipient in design of ibuprofen tablets.
- To assess the binding property of dikka malli banka as a natural polymer
- To assess the matrix forming property of natural polymer in design of sustained drug delivery system
- To study the coating tendency of dikka malli banka as a natural polymer on marketed tablet (Crocin 500 mg)
- To carry out the *in vitro* dissolution studies for all prepared formulations.
- Optimization of natural polymer concentration for binding ability.
- Optimization of prepared ibuprofen tablets for the release of over a period of 5 hrs.

Dikka malli banka is available in the agency areas like tribal regions and hilly areas. It is widely used by people in case of both medical and non-medical purposes. It contains polysaccharides and resins and hence by using this natural polysaccharide polymer, the gum is used to coat on tablets. The problems faced by the conventional dosage forms are successfully overcome by the formulation of sustained release dosage forms over a period of time. Oral delivery of the drug is by far the most preferable route of drug delivery due to the ease of administration, patient compliance and flexibility in the formulations. The presentation includes the availability of dikka malli banka, isolation of gum from it and their novel applications in drug development as a novel matrix former as well as film coating former.

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