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Sulfated-modified *Cordia myxa* gum as sustained-release and mucoadhesive excipient in Losartan Potassium tablet formulation

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Native gums may be limited in function, but modification may improve their activity. The objective of the present study was to evaluate native and modified form of *Cordia myxa* gum for its sustained release and mucoadhesive properties. Modification of natural *Cordia myxa* polysaccharide was done using sulfation technique. The modified polymer was evaluated for mucoadhesive characteristics with systematic optimization by central composite experimental designing. The tablets prepared with modified polymer were compared with native polymer and Carbopol 934. The mucoadhesive tablets of Losartan Potassium were evaluated for various parameters such as weight variation, hardness, friability, drug content, content uniformity, mucoadhesion strength, *in vitro* release characteristics and *in vivo* gastric retention study. Modification improved the gum's flow properties, resulting in Carr's index and Hausner's ratio lower than 15% and 1.25, respectively. Swelling studies showed that modified gum had lower water absorption capacity and swelling index values while packing properties improved upon sulfation, indicated by lower tapped density values. Modification of the gum was confirmed by FTIR, DSC and 11H NMR. The gum's mucoadhesive properties were improved and sustained release action of 24 h was obtained. Sulfation of native *Cordia myxa* gum improved the flow, mechanical and sustained-release properties of Losartan Potassium tablets. The results suggested that sulfation of *Cordia myxa* gum proved to be a successfully employed method for formulation of mucoadhesive drug delivery systems to alleviate the drawbacks of the conventional delivery of the drugs in the management of hypertension thereby improving the patient compliance.