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Cassia roxburghii seed galactomannan: Potential binding agent for pharmaceutical formulations

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Plant gums and mucilage have widely been used in various industries like paper, textile, food, ink, and in pharmaceuticals mainly as thickening, binding, emulsifying, suspending, and stabilizing agents and coating materials in micro encapsulation. The objectives of this study were to identify and isolate new sources of seed gums and formulate Paracetamol tablets using different natural and synthetic binding agents of different concentrations. The *C. roxburghii (Patent)* seed galactomannan was isolated mainly by Defatted seed gum and Filtered seed gum method, while the gum of *Moringa oleifera* was collected directly from the trees. The Paracetamol granules were prepared and evaluated for precompression parameters and found to be within the limits. A total of about 13 formulations such as F1 - F13 were formulated by wet granulation method using different concentrations of *C. roxburghii, Moringa oleifera*, Sodium carboxy methyl cellulose, Guar gum and Gelatin. The formulated tablets were then evaluated for post compression parameters and found to be within the official limits. 2% *C. roxburghii* filtered gum, *Moringa oleifera* showed lower % fines followed by *C. roxburghii* defatted. Increase in concentration of both *C. roxburghii* filtered gum, *Moringa oleifera* gum and *C. roxburghii* defatted seed gums from 2% to 6% effectively increases the disintegration time. As the concentration of *C. roxburghii* filtered gum, *Moringa oleifera*, *C. roxburghii* defatted gum increases from 2% to 6% friability also decreases respectively. Regarding the drug release, increase in the concentration from 2% to 6% of filtered *C. roxburghii*, *Moringa*, defatted *C. roxburghii* gum, decreases the drug release. Combination of 2% binders (1% filtered *C. roxburghii* gum + 1% *Moringa oleifera*) shows increase in hardness, decrease in % fines, friability, drug release, and disintegration time when compared to individual 2% gums. The study has finally concluded that the seeds of *Cassia roxburghii (Patent filed), Moringa oleifera* gum have great potentialities to become the new source of gums.

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