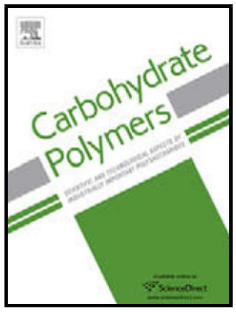

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Effect of carboxymethylation on rheological and drug release characteristics of *Terminalia catappa* gum

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Highlights

- QbD approach for carboxymethylation of *Terminalia catappa* gum (CMTC).
- Changes in rheological properties after carboxymethylation.
- Drug release from polysaccharide gel formulation.
- Correlation of rheological changes with drug release.

Abstract

The carboxymethylation of galactomannans, arabinogalactans, arbinoxylan, etc is known to modify solubility, swelling index, rheological behaviour, powder characteristics, etc. Therefore, an attempt had been made to study the effect of carboxymethylation on *Terminalia catappa* (TC) gum. For this, modified Williamson synthesis reaction was utilized employing Quality by Design (QbD) approach. Grafting of carboxymethyl group on *Terminalia catappa* was confirmed by ATR-FTIR, H^1NMR and DSC analyses. The rheological attributes revealed that the carboxymethylation of TC lowers the viscosity, enhance thermal stability