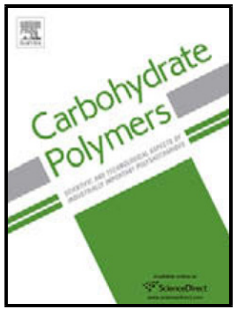

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PII: S0144-8617(18)30813-0
DOI: https://doi.org/10.1016/j.carbpol.2018.07.022
Reference: CARP 13822

To appear in:

Received date: 31-1-2018
Revised date: 19-6-2018
Accepted date: 8-7-2018

Please cite this article as: Kim S, Biswas A, Boddu V, Hwang H-Sik, Adkins J, Solubilization of cashew gum from *Anacardium Occidentale* in aqueous medium, *Carbohydrate Polymers* (2018), https://doi.org/10.1016/j.carbpol.2018.07.022

Solubilization of cashew gum from *Anacardium Occidentale* in aqueous medium

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Highlights

- Effect of pH on the dissolution of cashew gum in water was investigated.
- Molecular weight of cashew gum was measured with SEC.
- Aggregates of cashew gum disintegrate at higher pH than 6.2.
- Cashew gum thermally degrades at higher than 100 °C.
- Carboxylic acid groups play important role in the dissolution of cashew gum.

Abstract

Although cashew gum (CG) is known to be soluble in water, the solubilized CG does not exist as individual molecules in its solution. Instead, CG molecules form aggregates resulting in a turbid solution. For better solubilization of CG in water, two types of approaches are attempted: thermal degradation and changing the pH of solution medium. The thermal degradation at high temperatures does not follow the same pattern as a similar polysaccharide, starch: instead of being thermally degraded to smaller molecules that are readily soluble in water, the aggregated CG molecules were not fully disintegrated to individual molecules even after the heating to 190 °C. Size Exclusion Chromatography (SEC) shows that CG exists as entangled aggregates in aqueous solution at room temperature, and these aggregates disentangle in neutral or alkaline medium. Therefore, raising the pH of solution turns out to be a more efficient way to