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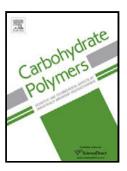
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ACCEPTED MANUSCRIPT

1 Comparison between the interactions of the cationic

surfactant DODAB with xanthan and galactomannan

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- 9 ABSTRACT

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10 The interactions of the cationic surfactant DODAB with anionic xanthan (XAN) and nonionic galactomannan (GMC) polysaccharides in solution were 11 12 investigated using tensiometry, differential scanning microcalorimetry (µ-DSC), zeta potential and dynamic light scattering (DLS) techniques and by the 13 calculated thermodynamic parameters of ΔG_{ves}^0 , ΔG_{ads}^0 , Γ_{max} and a_{min} . The 14 surfactant formed large unilamellar vesicles (LUV) that aggregated with both 15 16 polymers in solution. Increasing DODAB concentrations resulted in greater 17 and greater DODAB-XAN aggregates, high turbidity and even precipitation, 18 while DODAB-GMC aggregates remained equal sized, clear solution and no 19 precipitation observed. Further addition of DODAB to XAN solution was able to 20 resuspend the precipitates. The interactions with both polysaccharides 21 resulted in a more spontaneous adsorption of the DODAB-polymer aggregates

at the air/solution interface with lower surfactant population.

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