# Interaction of tamarind kernel powder, gum Arabic and maltodextrin in aqueous solution and microencapsulated systems

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**Abstract**  
The combination of polysaccharides as wall materials affects the stability of microcapsules. One of several factors influencing the stability is related to interaction between polysaccharides. The interaction of tamarind kernel powder, gum arabic and maltodextrin was obtained by UV-Visible spectrum and apparent viscosity in solution and on the aggregation of the W/O/W emulsions from encapsulation efficiency, creaming index, droplet size, Z-Potential, viscosity and microstructure analysis. The experimental results indicated that there are interactions between each polysaccharide. In the solution system, peak occurred at 210 nm for a solution mixture from 0.1% gum arabic, 10.00% maltodextrin and 0.02% tamarind kernel powder. Moreover, the synergistic viscosity increase was also observed. Interestingly, a combination of three polysaccharides in W/O/W emulsion exhibited the lowest creaming rate, the largest droplet, one peak of size distribution, and gave high encapsulation efficiency and the highest viscosity value compared to single and binary combination of each polysaccharide treatment. The results suggest that the interaction between tamarind kernel powder, gum arabic and maltodextrin is responsible for the stability enhancement of microencapsulated system. © 2013 Bentham Science Publishers.

**Author Keywords**  
Encapsulation; Gum arabic; Interaction; Maltodextrin; Tamarind kernel powder

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