JACALIN AND FRUTALIN A COMPARATIVE INTERACTION STUDY WITH POLYSACCHARIDE

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The binding capacity of jacalin and frutalin, D-galactose-binding lectins (from *Artocarpus integrifolia* and *A. incisa),* with galactomannans and galactoxyloglucans from different plant sources, were investigated. Galactomannans consist of a (1→4)-linked β-D-mannopyranosyl residues main chain substituted at O6 by single-units α-D-galactopyranosyl side chains, with mannose:galactose (M:G) ratios and statistical distribution of galactose residues varying from species to species. Galactoxyloglucans consist of a cellulosic-type (1→4)-linked β-D-glucan backbone and chains of α-xylopyranose and β-D-galactopyranosyl-(1→2)-α-D-xylopiranose, each (1→6)-linked to the backbone. In this work were used galactomannans from thirteen different sources with M:G ratios of 4.0:1 to 1.1:1 and xyloglucans from five different plants. Gel matrices were obtained when these polysaccharides were cross-linked by reaction with epychlorohydrin in the presence of NaOH, and used to study the lectin binding by affinity chromatography. Both lectins bound the galactomannan gels (although with different capacities) and none of them interacted with xyloglucan gels, showing the high specificity of these lectins for α-anomers. Thus the *M. scabrella* galactomannan (M:G 1.1:1) showed the best affinity matrix to both lectins although the same matrix with 3.0 mL of gel binding 1.8 mg from jacalin while only 1.3 mg from frutalin. *Parkinsonia aculeata* galactomannan (M:G 3.0:1) matrix was the worst for both lectins.

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