

## Position Statement On Polysaccharides

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Aloe polysaccharides consist of linear (unbranched) chains of beta-1-4-linked glucose and mannose molecules: owing to the presence of these two simple hexose sugars, they are also called glucomannans, and because there is considerably more mannose than glucose present, they are also sometimes called polymannans.

These linear chains range in size from a few molecules to several thousand molecules. By convention the lower limit is usually taken as a molecular weight of about 1,000 daltons for the material to qualify as a polysaccharide.

Different molecular-sized fractions may possess different physical characteristics as well as widely differing potential biological activities. Whatever the length of the chain or the physical characteristics, they are all properly designated aloe polysaccharides.

The use of the term - mucopolysaccharides - has been widely misunderstood. It should be restricted to designate long-chain polysaccharides in which the linear molecules are chemically linked forming a colloidal system. When these linkages between these long molecules have been formed, the physical characteristics of the aqueous solution assume an increased viscosity with gel-like characteristics and, instead of being a clear solution, assume a degree of opacification.

As the chain lengths, the glucose to mannose ratios, the degree of colloidal chemical linkages are only very rarely determined owing to the sophisticated methodology required and the high cost of such evaluations, the term - mucopolysaccharides - should be actively discouraged and phased out in product descriptions as being without any cogent meaning or significance because in a given product these colloidally-linked molecular species are not determined.

Upon standing, an aloe liquid with the physical characteristics of increased viscosity and opacification will undergo spontaneous loss of both of these characteristics as the chemical linkages between the long chains become severed. The remaining clear solution, now possessing

water-like consistency, still contains the long chain molecules or polysaccharides, but none would now qualify as mucopolysaccharides.