



RESISTANT MALTODEXTRINS (Fibersol)

Medallion Laboratories

INFO@Medlabs.com

Phone 800-245-5615

Technical Bulletin

By Jon DeVries

DEFINITION

Resistant maltodextrins (also known by trade names such as Fibersol and Pinefiber) are, by definition, short chain polymers of glucose that are resistant to digestion in the human digestive system. Resistant maltodextrins arise from a number of sources, including some small amounts that are incurred during food processing. Most of the resistant maltodextrins in food products today, however, are purposefully manufactured from starch by treatments with heat and/or acid, and/or enzymes.

CHEMISTRY

Resistant maltodextrins are typically produced by purposeful rearrangement of starch or hydrolyzed starch to convert a portion of the normal *alpha*-1,4-glucose linkages to random 1,2-, 1,3- and 1,4-*alpha* or *beta* linkages. The human digestive system effectively digests only *alpha*-1,4-linkages, therefore the other linkages render the molecules resistant to digestion. When samples are digested using the human simulating enzymes of the dietary fiber tests, approximately 40% of the digestion resistant maltodextrin precipitates in 4:1 alcohol:water (the traditional precipitating solvent for dietary fiber measurements). The remaining 60% must be concentrated, isolated, and quantitated using size exclusion high pressure liquid chromatography.

NUTRITION INFORMATION

Resistant maltodextrins are not digested or absorbed in the human small intestine, and thus pass to the large intestine. There the undigested maltodextrins are fermented by the colonic bacteria where they yield short chain fatty acids, lower the pH, and gaseous byproducts. Research studies have shown improved laxation with the consumption of resistant maltodextrins.

ASSAY PRINCIPAL AND APPLICABILITY

Samples containing resistant maltodextrins are analyzed using AOAC International Official Method of Analysis number 2001.03. Samples are digested using the simulated human digestive system of AOAC Official Method 985.29 for dietary fiber. The solution from the digestion is concentrated, purified and analyzed by size exclusion chromatography to determine the digestion resistant oligosaccharide content. Results are reported as dietary fiber and as resistant maltodextrins. Analysis of resistant maltodextrins can be requested as either resistant maltodextrins, AOAC 2001.03, or as Fibersol. Please inform the laboratory if there is glycerol present in the sample.

Lower Detection Limit Reporting Units	0.1 g/100g (w/w)
Traditional fiber in sample	g/100g
Other undigestible maltodextrins per AOAC 2001.03	g/100g
Information required with sample	Estimate of level
Special Notes:	Indicate if sample contains glycerol, inulin, fructooligosaccharides, or polydextrose.

For more Information, please contact Medallion Laboratories:

Mail:
9000 Plymouth Ave.
Golden Valley, MN
55427

Email:
info@medlabs.com

Website:
www.medlabs.com

Phone:
800.245.5615