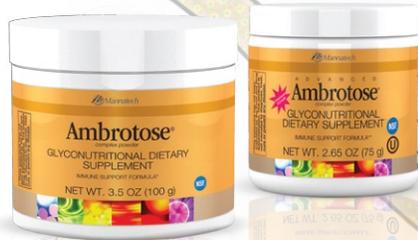




About Mannatech's Glyconutrient Sugars and Healthy Blood Glucose Levels

Insight from Mannatech's R&D Department

What are glyconutrients?



Mannatech's glyconutrients are proprietary blends of plant saccharides that include sources of, or precursors to, sugars used in the body for glycoprotein synthesis. Glycoproteins, which serve numerous biological functions, are critically important for the proper function of cells and their ability to communicate with each other. The sugars (monosaccharides) contained in glycoproteins are galactose, glucose, mannose, fucose, xylose, N-acetylneuraminic acid, N-acetylglucosamine and N-acetylgalactosamine. Mannatech's Ambrotose products are available in two formulations: classic Ambrotose complex® and Advanced Ambrotose® products. Sources

of sugars in both products include pure aloe vera gel, arabinogalactan, gum ghatti, and gum tragacanth. Advanced Ambrotose products also contain fucoidans from the brown alga, *Undaria pinnatifida*.

But I thought that people should avoid eating sugar!

While glyconutrients are sometimes referred to as "sugars" or "nature's sugars", they are different from the sugar (sucrose) in unhealthy foods like sugary soft drinks or candy. Most people eat entirely too much sucrose, a disaccharide that raises blood glucose and insulin levels and is one of many culprits contributing to our current obesity epidemic.

Mannatech's glyconutrient sugars are healthy, fiber-rich complex plant saccharides that do not affect blood glucose levels. In a randomized, double-blind, placebo-controlled trial of healthy adults, intake of Ambrotose® complex powder had no effect on blood glucose levels.¹ They are also low in calories. A 2 gram serving of Ambrotose complex, Advanced Ambrotose powder or NutriVerus™ powder is just 7 calories.



What can Mannatech's glyconutrients do for me?

During the past 16 years, over a half million people around the world have safely experienced the benefits of Mannatech's glyconutrient dietary supplements. In peer-reviewed pre-clinical and clinical research, the products have been shown to support cellular communication,² cognitive^{3,4,5} and gastrointestinal⁶ health. And, more than 50 patents have been issued for technology related to Ambrotose products.

REFERENCE LIST

1. Best T, Howe P, Bryan J, et al. Plant polysaccharides, memory and cognition in middle-aged adults. *Presented at the 38th Australasian Experimental Psychology Conference in Auckland, New Zealand, April 28-30, 2011* 2011;
2. Alavi A, Fraser W, Tarelli E, et al. An open-label dosing study to evaluate the safety and effects of a dietary plant derived polysaccharide supplement on the N-glycosylation status of serum glycoproteins in healthy subjects. *Eur J Clin Nutr* 2011; 1-9.
3. Stancil, A.N., Hicks, L.H. Glyconutrients and perception, cognition, and memory. *Perceptual Mot Skills* 2009; 10: 259-70.
4. Wang, C., Szabo, J.S., Dykman, R.A. Effects of a carbohydrate supplement upon resting brain activity. *Integr Physiol Behav Sci* 2004; 39(2): 126-38.
5. Best T, Kemps E, Bryan J. Saccharide effects on cognition and well-being in middle-aged adults: A randomized controlled trial. *Dev Neuropsych* 2010; 35(1): 66-80.
6. Marzorati, M., Verhelst, A., Luta, G., et al. *In vitro* modulation of the human gastrointestinal microbial community by plant-derived polysaccharide-rich dietary supplements. *Int J Food Microbiol* 2010; 139(3): 168-76.