

August 1st, 2012

Compounds in grape seed and green tea extracts may play a role in the inhibition of enzymes that are responsible for converting complex carbohydrates into glucose in the blood stream

GRAPE SEED AND GREEN TEA EXTRACTS MAY PLAY A ROLE IN THE DIGESTION OF CARBOHYDRATES

The collaboration between researchers from the USANA Health Sciences R&D team and Linus Pauling Institute at Oregon State University has resulted in exciting research over the past several years. A study published last month by this team of researchers in the Journal of Agricultural and Food Chemistry looks at the effect of grape seed extract and green tea on two enzymes that play a key role in the digestion of starches.

The enzymes at the center of this research are α -amylase and α -glucosidase. These enzymes play a role in the digestion of carbohydrates, by helping convert them into glucose. Glucose flows through the bloodstream where it can either be used right away, or stored for later. Those with diabetes are not able to properly trigger the storage of unused glucose. This can result in an unwanted spike in blood glucose levels after the consumption of carbohydrates. If it was possible to inhibit the flow of carbohydrates to glucose in the bloodstream this would help in “diminishing the postprandial effect of starch consumption on blood glucose levels.” In other words, it would help slow down the starch digestion and give more time for the body to use the glucose, which may help prevent as high of peaks in blood glucose levels.

The results of this in vitro test show that green tea extracts and catechin 3-gallates are potent inhibitors of α -glucosidase, one of the enzymes responsible for starch digestion. Grape seed extract on the other hand, inhibited both α -glucosidase and α -amylase. And it did so “with equal and much higher potency, respectively, than acarbose” (a widely used pharmacological glucosidase inhibitor). This data suggests that further research should be done to examine the efficacy of these ingredients as possible alternatives to pharmaceutical inhibitors of α -glucosidase and α -amylase.

Yilmazer-Musa M, Griffith AM, Michels AJ, Schneider E, Frei B. Grape Seed and Tea Extracts and Catechin 3-Gallates Are Potent Inhibitors of α -Amylase and α -Glucosidase Activity. Journal Of Agricultural And Food Chemistry. 2012 June 15 (online).