

## Efficacy of *Alpha*-galactosidase in CCI Symptom Treatment

Study	Subjects	Study Design	Treatment	Endpoints	Outcome of Enzyme Treatment	Conclusions
<b>Positive Outcome</b>						
Solomons 1991 <sup>15</sup>	38 healthy adults	Cross-over study	Refried black bean meal (230 g) alone (control) followed by meal with 5, 10, or 70 drops <i>alpha</i> -galactosidase preparation	Breath hydrogen concentrations; GI symptoms	Decrease in hydrogen responses Decrease in GI symptoms	<i>Alpha</i> -galactosidase is beneficial for treatment of discomfort related to bean intolerance
Solomons 1991 <sup>16</sup>	20 bean-intolerant patients	Randomized cross-over study	Refried black bean meal (230 g) alone and with 0.5 mL <i>alpha</i> -galactosidase preparation	Presence and intensity of spontaneous symptoms, including diarrhea, flatulence, and belching	Decrease in symptoms (45% of patients given enzyme treatment were symptom-free) Decrease in symptom intensity	<i>Alpha</i> -galactosidase is effective in reducing or eliminating intolerance symptoms from fermentation of dietary bean oligosaccharides
Ganiats 1994 <sup>17</sup>	19 healthy adults	Randomized cross-over study	Meatless chili alone and with 8 drops <i>alpha</i> -galactosidase preparation*	GI symptoms	Decrease in number of flatulence events per hour (statistically significant 5 hours post meal only) No difference in extent of bloating or pain following meal	<i>Alpha</i> -galactosidase is efficacious in some patients for prophylaxis of GI intolerance of oligosaccharides
Lettieri 1998 <sup>18</sup>	37 type 2 diabetes patients	Randomized, double-masked, placebo-controlled, cross-over study	Acarbose 100 mg; acarbose 100 mg plus <i>alpha</i> -galactosidase preparation*; or placebo	Breath hydrogen concentrations; frequency and severity of flatulence	Decrease in breath hydrogen Decrease in flatulence score	<i>Alpha</i> -galactosidase alleviates flatulence accompanying acarbose treatment (but may interfere with glucose-lowering effects of acarbose)
<b>Negative Outcome</b>						
Rupp 1993 <sup>19</sup>	20 healthy adults	Randomized, single-blinded cross-over study	Refried bean meal (3 oz) alone and with 5 drops <i>alpha</i> -galactosidase preparation*	Breath hydrogen and methane; incidence of flatulence, bloating, an heartburn	No change in hydrogen or methane production No effect on incidence of symptoms	<i>Alpha</i> -galactosidase dose not have an effect on breath hydrogen/methane nor symptoms following ingestion of refried beans

GI = gastrointestinal, (\*) = Beano<sup>®</sup> brand *alpha*-galactosidase preparation.