Discussion

**Dual Action** GLUCOSE SUPPORT is the only product on the market with a dual mechanism of action that targets enzymes involved in carbohydrate digestion and assimilation. Its dual action is a result of its ability to uniquely slow carbohydrate digestion through interaction with both alpha-amylase (starch-degrading enzyme) and alpha-glucosidase (sucrose-degrading enzyme). This twofold activity helps reduce the impact of high-glycemic foods.*

**Brown Seaweed** GLUCOSE SUPPORT is a clinically tested blend of 20% purified polyphenols—more precisely phlorotannins (PHTs)—sourced from *Ascophyllum nodosum* (kelp) and *Fucus vesiculosus* (bladderwrack), two species of brown seaweed. Like many sea plants, these brown seaweeds are a rich source of antioxidant phenolic compounds and iodine. The ability of naturally occurring polyphenols and PHTs, including those from brown seaweed, to affect the activities of alpha-amylase and alpha-glucosidase enzymes in vitro has been repeatedly demonstrated.*[1-5]

**Experimental Studies** In one experiment, Roy et al showed that InSea2 has a dose-dependent effect on alpha-amylase and alpha-glucosidase with very low IC50 values compared to other plant polyphenols. In animals, the extract was able to reduce by 90% (p < 0.05) the increase in postprandial blood glucose normally seen 30 minutes after a meal and to reduce peak insulin secretion by 40%. Blood glucose curves showed characteristic features of a low glycemic food; that is, in treated animals, glucose absorption was prolonged for 360 minutes compared to less than 120 minutes in the control group. In addition, the control group experienced some postprandial hypoglycemia before returning to baseline. This condition was absent in the treated group. According to the researchers, “These results demonstrate the potency of this specific PHT extract to beneficially modulate carbohydrate digestion and assimilation.”*

**Human Studies: Starch and Table Sugar** Dual-action GLUCOSE SUPPORT is the only ingredient on the market able to slow down digestion of both starch and table sugar, thus reducing the impact of high-glycemic foods. In a randomized, crossover, double-blinded, placebo-controlled human clinical trial, when compared to placebo, consumption of InSea2 (500 mg/d) 30 minutes before ingesting white bread resulted in a 12.1% reduction in the plasma insulin incremental area under the curve (IAUC) (p = 0.04, adjusted for baseline) and a 7.9% increase in the Cederholm index of insulin sensitivity (p < 0.05). There was also a 9.0% and 48.3% drop in plasma glucose AUC and IAUC, respectively.[6] These improved glucose responses to white bread were further validated in a small human study conducted by an independent consumer wherein InSea2 was able to reduce postprandial blood glucose AUC by 14.5% and blood glucose IAUC by 28.1%.*[7]

In an unpublished sucrose tolerance test, patients ingested 500 mg of InSea2 in a lemon tea or a placebo lemon tea, both of which contained 50 g of sucrose. Although results did not achieve significance, a reduction in the glucose IAUC (-39%) and a near-significant trend toward an increase in the Cederholm index (+4.9%) were observed. In effect, lowering the postprandial blood glucose response naturally promotes healthy glucose metabolism and insulin sensitivity. In another human trial, treatment with a multi-ingredient formulation containing InSea2 resulted in increased feelings of satiety, a decrease in next-meal caloric intake, and a significant impact on weight reduction compared to placebo.*[9]

**Safety** InSea2 comes from two species of brown seaweed that are considered foods. The actives are obtained via hot water extraction methods that meet the highest criteria in terms of quality, purity, and biological activity. InSea2 has been evaluated in clinical trials, animal safety and efficacy studies, and in vitro tests. It has an excellent safety profile and is well-tolerated.*

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.
Serving Size: 2 Capsules
Servings Per Container: 30

** Iodine (naturally occurring in brown seaweed blend) 150 mcg 100%

Brown Seaweed Blend (Ascophyllum nodosum and Fucus vesiculosus)(20% polyphenols)(InSea2®) 500 mg **

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References
7. Customer tests: Validation of starch-blocking action of InSea2™ in Asian population. Technical note: InSea2™. [on file]