

Carb X



Clinical Applications

- Supports a Healthy Glycemic Response to Foods*
- Helps Support Healthy Blood Glucose Levels*

*Carb X features berberine, a naturally occurring plant alkaloid used for supporting healthy blood glucose levels, and InSea2®, a clinically studied blend of polyphenols derived from sustainably harvested, wildcrafted brown seaweed shown to support a healthy glycemic response to food.**

All KC PRO-NUTRIENTS Formulas Meet or Exceed cGMP Quality Standards

Manufactured for:
KC PRO-NUTRIENTS
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Discussion

Berberine is a plant alkaloid derived from several different plant species that have been used in Ayurveda and traditional Chinese medicine for a variety of therapeutic applications, including supporting healthy blood glucose metabolism and a healthy insulin response.^[1] Although research has clearly demonstrated berberine's effect on blood glucose, the mechanisms through which this effect occurs are not entirely clear. Researchers have hypothesized that the modulation of gut microbes may be one mechanism by which berberine affects blood glucose metabolism.^[2] Animal and in vitro studies have suggested that berberine moderates glucose metabolism through a multi-pathway mechanism that includes AMP-activated protein kinase, the JNK pathway, and the PPAR-alpha pathway.^[3,4] Additionally, berberine has been observed to inhibit the expression of disaccharidases in the duodenum, resulting in less glucose being formed from carbohydrate digestion. Berberine also appears to improve the function of beta cells in the pancreas.^{*[5]}

Although more research is needed to evaluate the effect of berberine in healthy subjects, several trials have assessed the hypoglycemic effect of berberine as an adjuvant with existing treatments. These studies were primarily in subjects with type 2 diabetes who were administered berberine doses ranging from 1,000 to 1,500 mg per day. The results demonstrated a reduction in HbA1C, fasting blood glucose, and post-prandial plasma glucose levels.^{*[1]}

The branded ingredient InSea2® is a blend of polyphenols derived from the wildcrafted brown seaweeds *Ascophyllum nodosum* and *Fucus vesiculosus* that are sustainably harvested from the North Atlantic Ocean. InSea2 plays a role in the inhibition of alpha-amylase and alpha-glucosidase, two key enzymes involved in the digestion and assimilation of starch and sugar. Clinical studies with InSea2 have shown an effect of reducing post-prandial blood glucose levels, improving insulin sensitivity, and maintaining optimal blood glucose metabolism.^{*[6,7]}

A randomized, double-blind, placebo-controlled trial in dysglycemic patients (N = 65) evaluated InSea2 (combined with 7.5 mcg of chromium picolinate) on glycemic status over a six-month period. At the end of the study period, 18.2% of patients in the test group returned to normal glycemic status compared to no change in glycemic status in the placebo group. In addition, a significant number of subjects changed categorization from impaired fasting glycemia to impaired glucose tolerance, suggesting improvement in insulin sensitivity and glycemic status in the test group. Overall, subjects in the InSea2 test group had statistically significant improved markers for glycemic health, whereas the placebo subjects—exposed to the same diet and physical activity program—showed a decline in glycemic health markers.^{*[6]}

A randomized, double-blind, placebo-controlled, crossover study in healthy subjects (N = 23) aged 19-59 years examined the impact of InSea2 on postload plasma glucose and insulin concentrations. Two capsules with 250 mg of InSea2 were consumed 30 minutes prior to a 50 g load of carbohydrate, and plasma glucose and insulin responses were measured over a three-hour period post-ingestion. Consumption of InSea2 showed a modulation of insulin homeostasis following ingestion of a carbohydrate-rich meal.^{*[7]}

Carb X combines clinically studied levels of berberine and InSea2 and is formulated to support a healthy glycemic response to ingested foods while maintaining healthy blood glucose levels.*

***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.**

Carb X



Supplement Facts

Serving Size: 1 Capsule
Servings Per Container: 60

	Amount Per Serving	%Daily Value
Chromium (as chromium nicotinate glycinate chelate) ^{S1}	7.5 mcg	21%
Berberine HCL	500 mg	**
Brown Seaweed Blend (<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>)(20% polyphenols) ^{S2}	250 mg	**

** Daily Value not established.

Other Ingredients: Capsule (hypromellose and water), magnesium stearate, and silica.

S1. TRAACS® is a registered trademark of Albion Laboratories, Inc.

S2. InSea2® is a registered trademark of innoVactiv Inc.

Directions

Take one capsule twice daily before meals, or as directed by your healthcare professional.

Consult your healthcare professional prior to use. Individuals taking medication should discuss potential interactions with their healthcare professional. Do not use if tamper seal is damaged.

References

1. Imenshahidi M, Hosseinzadeh H. *Phytother Res.* 2019 Mar;33(3):504-523. doi:10.1002/ptr.6252.
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3. Zhang Q, Xiao X, Feng K, et al. *Evid Based Complement Alternat Med.* 2011;2011:924851. doi:10.1155/2011/924851.
4. Zhou L, Yang Y, Wang X, et al. *Metabolism.* 2007;56(3):405-412. doi:10.1016/j.metabol.2006.10.025.
5. Chen C, Yu Z, Li Y, et al. *Am J Chin Med.* 2014;42(5):1053-1070. doi:10.1142/S0192415X14500669.
6. Derosa G, Cicero AFG, D'Angelo A, et al. *Phytother Res.* 2019;33(3):791-797. doi:10.1002/ptr.6272.
7. Paradis ME, Couture P, Lamarche B. *Appl Physiol Nutr Metab.* 2011;36(6):913-919. doi:10.1139/H11-115.

Formulated To Exclude

Wheat, gluten, yeast, soy, animal and dairy products, fish, shellfish, peanuts, tree nuts, egg, ingredients derived from genetically modified organisms (GMOs), artificial colors, artificial sweeteners, and artificial preservatives.

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