



## Phase 2 Starch Neutralizer®

### What Is It?

Phase 2 Starch Neutralizer® (Phase 2®) is a standardized, purified extract of *Phaseolus vulgaris* bean providing potential support for healthy carbohydrate digestion and postprandial glucose metabolism as well as weight loss when combined with a healthy diet and exercise.\*

### Uses For Phase 2 Starch Neutralizer®

**Maintains Healthy Carbohydrate Digestion:** Several studies have indicated that partially purified kidney bean extract may help support healthy intraduodenal activity of pancreatic alpha-amylase, thereby promoting healthy carbohydrate digestion. Alpha-amylase is a key enzyme that catalyzes the hydrolysis of 1,4-alpha-glycosidic linkages in starch, glycogen, and related polysaccharides. This enzyme is released from both the salivary glands and the pancreas and is involved in the digestion of carbohydrates. When carbohydrates are consumed and reach the small intestine, the pancreas releases alpha-amylase into the duodenum, the uppermost segment of the small intestine, where the enzyme breaks down starch. A recent study performed at Georgetown University suggests that kidney bean extract supports healthy starch digestion and maintains healthy post prandial glucose metabolism in animals. Additionally, several human studies performed by the Mayo Clinic also report that partially purified kidney bean extract supports healthy starch digestion, postprandial glucose metabolism and gastric emptying. Importantly, purified kidney bean extract maintains activity when exposed to gastric and duodenal juices.\*

### What Is The Source?

Phase 2 Starch Neutralizer is derived from the dried bean fraction of *Phaseolus vulgaris* white bean extract.

### Recommendations

Pure Encapsulations recommends 1-3 capsules at the start of a starch-containing meal or snack.

### Are There Any Potential Side Effects Or Precautions?

At this time, there are no known side effects or precautions. If pregnant or lactating, consult your physician before taking this product.

### Are There Any Potential Drug Interactions?

At this time, there are no known adverse reactions when taken in conjunction with medications.

### References:

1. Vinson, JA and Shuta, DM. In Vivo Effectiveness of a Starch Absorption Blocker in a Double-Blind Placebo-Controlled Study with Normal Human Subjects. Department of Chemistry, University of Scranton, Scranton PA. Sept. 2001.
2. Boivin M, Zinsmeister AR, Go VL, DiMagno EP. Effect of a purified amylase inhibitor on carbohydrate metabolism after a mixed meal in healthy humans. *Mayo Clin Proc* 1987 Apr;62(4):249-55.
3. Boivin M, Flourie B, Rizza RA, Go VL, DiMagno EP. Gastrointestinal and metabolic effects of amylase inhibition in diabetics. *Gastroenterology* 1988 Feb;94(2):387-94.
4. Layer P, Carlson GL, DiMagno EP. Partially purified white bean amylase inhibitor reduces starch digestion in vitro and inactivates intraduodenal amylase in humans. *Gastroenterology* 1985 Jun;88(6):1895-902.
5. Kataoka K, DiMagno EP. Effect of prolonged intraluminal alpha-amylase inhibition on eating, weight, and the small intestine of rats. *Nutrition* 1999 Feb;15(2):123-9.
6. Layer P, Rizza RA, Zinsmeister AR, Carlson GL, DiMagno EP. Effect of a purified amylase inhibitor on carbohydrate tolerance in normal subjects and patients with diabetes mellitus. *Mayo Clin Proc* 1986 Jun;61(6):442-7.
7. Healthnotes Clinical Essentials. Copyright 2004. Healthnotes, Inc.

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**Phase 2 Starch Neutralizer®**

**each vegetable capsule contains**



Phaseolus vulgaris (dried bean fraction) .....500 mg.  
vitamin C (as ascorbyl palmitate) .....10 mg.  
(hypo-allergenic plant fiber added to complete capsule volume requirement)

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