GlucoBrium™
Healthy Blood Sugar Metabolism

DESCRIPTION
GlucoBrium,™ provided by Douglas Laboratories, supplies a synergistic combination of Gymnema sylvestre, fenugreek and cinnamon extracts designed to support healthy blood sugar metabolism.

FUNCTIONS
Glucose metabolism that is associated with abnormally high blood glucose can lead to high levels of glycation. Glycation is the non-enzymatic attachment of sugars to major molecules in the body, including proteins, lipids, and nucleic acids. Glycation reactions generate advanced glycation end-products (AGEs) and glycotoxin intermediates. AGEs cause abnormal and destructive functioning of body proteins, lipids, and nucleic acids. AGE-associated damage is suspected in the pathogenesis of many diseases and age-related deteriorations.
Gymnema sylvestre is an Ayurvedic botanical that may assist in the normal regeneration and repair of healthy pancreatic beta cells. Gymnema is also suspected of reducing intestinal glucose absorption. Native to India, this woody, climbing plant has been used traditionally in India to treat madhu meha, or “honey urine.” Gymnemic acid, an active component of Gynema sylvestre, has been identified in numerous animal studies as having anti-hyperglycemic effects. Human studies have indicated it may be useful in healthy glucose metabolism. Fenugreek, a popular spice in Asia and Europe, contains a high percentage of mucilage, a soluble dietary fiber. Soluble dietary fiber plays important roles in the digestive system, helping to inhibit the absorption of sugars and fats and causing blood sugar levels to rise at a slower rate. In studies using diabetes-induced rats, preparations of fenugreek caused a reduction in postprandial elevation in blood glucose, mainly by delaying the digestion of sucrose. Other animal studies indicate that the active ingredient, 4-hydroxyisoleucine, may also play important roles in supporting pancreatic beta-cells during insulin secretion. Human studies have also indicated that fenugreek plays supportive roles in blood sugar and cholesterol metabolism.
Recently, cinnamon, a well-known spice and flavoring, has been gaining attention for its roles that it plays in supporting the body’s metabolism of glucose. In one study, patients given cinnamon showed significant decreases in fasting glucose, triglycerides and cholesterol. Another study has indicated that cinnamon may be a strong potentiator of insulin. Interestingly, while preliminary studies have identified methyl hydroxyl chalcone polymer(MCHP) as the primary active ingredient, more recent studies have indicated that this molecule may have been incorrectly identified. The active ingredients are now believed to be primarily water-soluble proanthocyanidin type-A polymers. Since proanothocyanidins have excellent antioxidant potential, cinnamon may offer both the benefits of supporting blood sugar metabolism, as well as providing significant antioxidant protection to the cell. While the safety of whole cinnamon spice is well known, there is some concern that long term use of amounts greater than that used in cooking may lead to potential toxic buildup. GlucoBrium contains Cinnulin PF™, a patented water-soluble cinnamon extract that is processed using a unique extraction method to remove any potential toxins that whole cinnamon may contain.

INDICATIONS
GlucoBrium may be a useful dietary supplement for individuals wishing to support healthy blood sugar metabolism with this unique blend of ingredients.

FORMULA (#99155)
1 Vegetarian Capsule contains:

Standardized Gymnema extract (40% gymnemic acids, leaf)	200 mg
Fenugreek extract (standardized to 20% 4-hydroxyisoleucine)	125 mg
Cinnamon Extract(Cinnulin PF)™	125 mg

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SUGGESTED USE
Adults take 1-2 capsules daily with meals or as directed by physician.

SIDE EFFECTS
No adverse side effects reported.

STORAGE
Store in a cool, dry place, away from direct light. Keep out of reach of children.

REFERENCES
Anderson RA, Broadhurst CL, Polansky MM, Schmidt WF, Khan A, Flanagan VP, Schoene NW, Graves DJ. Isolation and characterization of polyphenol type-A polymers from cinnamon with insulin-like biological activity. J Agric Food Chem. 2004 Jan 14;52(1):65-70.
Baskaran K, Ahamath BK, Shanmugasundaram KR, Shanmugasundaram ER. Antidiabetic effect of a leaf extract from Gymnema sylvestre in non-insulin-dependent diabetes mellitus patients. J Ethnopharmacol 1990;30:295-305.
Bordia A, Verma SK, Srivastava KC. Effect of ginger (Zingiber officinale Rosc.) and fenugreek (Trigonella foenumgraecum L.) on blood lipids, blood sugar and platelet aggregation in patients with coronary artery disease. Prostaglandins Leukot Essent Fatty Acids. 1997 May;56(5):379-84.
Broca C, Gross R, Petit P, Sauvaire Y, Manteghetti M, Tournier M, Masiello P, Gomis R, Ribes G. 4-Hydroxyisoleucine: experimental evidence of its insulinotropic and antidiabetic properties. Am J Physiol. 1999 Oct;277(4 Pt 1):E617-23
Imparl-Radosevich J, Deas S, Polansky MM, Baedke DA, Ingebritsen TS, Anderson RA, Graves DJ. Regulation of PTP-1 and insulin receptor kinase by fractions from cinnamon: implications for cinnamon regulation of insulin signalling. Horm Res. 1998 Sep;50(3):177-82.
Jarvill-Taylor KJ, Anderson RA, Graves DJ. A hydroxychalcone derived from cinnamon functions as a mimetic for insulin in 3T3-L1 adipocytes. J Am Coll Nutr. 2001 Aug;20(4):327-36.
Khan A, Safdar M, Ali Khan MM, Khattak KN, Anderson RA. Cinnamon improves glucose and lipids of people with type 2 diabetes. Diabetes Care. 2003 Dec;26(12):3215-8.
Qin B, Nagasaki M, Ren M, Bajotto G, Oshida Y, Sato Y. Cinnamon extract prevents the insulin resistance induced by a high-fructose diet. Horm Metab Res. 2004 Feb;36(2):119-25.
Sauvaire Y, Petit P, Broca C, Manteghetti M, Baissac Y, Fernandez-Alvarez J, Gross R, Roye M, Leconte A, Gomis R, Ribes G. 4-Hydroxyisoleucine: a novel amino acid potentiator of insulin secretion. Diabetes. 1998 Feb;47(2):206-10.
Shanmugasundaram ER, Rajeswari G, Baskaran K, et al. Use of Gymnema sylvestre leaf in the control of blood glucose in insulin-dependent diabetes mellitus. J Ethnopharmacol 1990;30:281-294.

For more information on GlucoBrium™ visit douglaslabs.com

† 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.

Manufactured by
Douglas Laboratories
600 Boyce Road
Pittsburgh, PA 15205
800-245-4440
douglaslabs.com

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Your patients trust you.**