

Terrain Sugar Balance



Clinical Applications

- Supports Healthy Glucose Metabolism*
- Supports Healthy Blood Lipid Levels Already in the Normal Range*
- Improves/Maintains Healthy Nerve Function*

Terrain Sugar Balance features significant quantities of key ingredients that support insulin utilization and glucose metabolism. CinSulin® is a safe, patented, 100% water-soluble, 10:1 concentrated form of cinnamon that provides polyphenol polymers. Standardized American ginseng, green tea, gymnema, and alpha-lipoic acid help protect pancreatic cells, support insulin sensitivity, and provide antioxidant activity. Albion®'s TRAACS® patented chromium is added for its role in enhancing insulin activity.*

All Terrain Holding Company Formulas Meet or Exceed cGMP Quality Standards

Discussion

CinSulin® is a clinically proven, patented water extract of cinnamon (*Cinnamomum cassia*) shown to powerfully influence glucose metabolism. The unique, proprietary extraction and dehydration process for manufacturing CinSulin results in a concentrated (10:1) extract that minimizes undesirable substances, while retaining those that are health-promoting, such as type-A polyphenolic polymers. Cinnamon has been studied extensively for its roles in glucose uptake, glycogen synthesis, insulin action, and support for healthy blood lipids.^[1,2] Anderson et al. demonstrated a 20-fold increase in glucose uptake in fat cells treated with water-soluble type-A polymers.^[3]

American Ginseng (*Panax quinquefolius*) exhibits activities that support blood sugar levels already in the normal range.^[4,5] The American ginseng in Terrain Sugar Balance is a standardized 12% (ginsenosides) extract.

Gymnema Leaf Extract (*Gymnema sylvestre*) is a water-soluble extract made from the leaves of *Gymnema sylvestre* and standardized to 25% gymnemic acid. This form does not decrease iron absorption as other forms may.^[6] *Gymnema* can enhance the effects of insulin and oral hypoglycemic agents by reducing glucose absorption in the intestine, stimulating pancreatic beta cell growth, and possibly supporting endogenous insulin secretion. *Gymnema* may also support serum lipid levels already in the normal range.^[7]

Green Tea Polyphenols (*Camellia sinensis*) protect erythrocytes from oxidative stress, possibly supporting the health of tissues that could otherwise be affected by too high levels of blood glucose.^[8] In research studies EGCG enhanced insulin activity,^[9] protected the pancreatic cells by reducing undesirable cytokines (e.g. IL-1beta), and reduced IFN-gamma-induced nitric oxide production. It affected genes that inhibit activation of NF-kappaB^[10] and reduced the level of messenger RNA for the hepatic gluconeogenic enzymes.^[11]

Alpha Lipoic Acid is a potent antioxidant that acts by multiple mechanisms, both physiologically and pharmacologically, to support healthy peripheral nerves and maintain blood pressure already in the normal range.^[12,13] In higher doses, alpha lipoic acid supports blood sugar levels already in the normal range.

Chromium: The Albion® TRAACS® patented process that combines chromium with glycinate and niacin increases its bioavailability and supports healthy glucose metabolism.^[14] Individuals with poor glucose metabolism tend to have lower blood chromium levels. Chromium enhances the metabolic action of insulin and may support heart health, especially in overweight individuals.

*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.

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Terrain Holding Company
2 E Congress St, Ste. #900
Tucson, AZ, 85701

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Supplement Facts

Serving Size: 2 Capsules
Servings Per Container: 60

	Amount Per Serving	%Daily Value
Chromium (as chromium nicotinate glycinate chelate) ^{S1}	200 mcg	571%
American Ginseng Extract (<i>Panax quinquefolius</i>)(root and leaf)(15% ginsenosides)	375 mg	**
Alpha-Lipoic Acid	200 mg	**
Green Tea Extract (<i>Camellia sinensis</i>)(leaf)(30% EGCG)	200 mg	**
Gymnema 5:1 Extract (<i>Gymnema sylvestri</i>)(leaf)	200 mg	**
Cinnamon 10:1 Aqueous Extract (<i>Cinnamomum cassia</i>)(bark) ^{S2}	200 mg	**

** Daily Value not established.

Other Ingredients: Capsule (hypromellose and water), microcrystalline cellulose, stearic acid, magnesium stearate, silica, and medium-chain triglyceride oil.



S1. TRAACS and the Albion Medallion design are registered trademarks of Albion Laboratories, Inc.

S2. CinSulin® is registered trademark of Tang-An Medical Co., Ltd. U.S. Patent 6,200,569.

Directions

Take two capsules daily, 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.

Cautions

Do not use if you are pregnant or lactating.

References

1. Kim SH, Choung SY. Antihyperglycemic and antihyperlipidemic action of *Cinnamomi Cassiae* (Cinnamon bark) extract in C57BL/Ks db/db mice. *Arch Pharm Res.* 2010 Feb;33(2):325-33. [PMID: 20195835]
2. Ziegenfuss TN, Hofheins JE, Mendel RW, et al. Effects of a water-soluble cinnamon extract on body composition and features of the metabolic syndrome in pre-diabetic men and women. *J Int Soc Sports Nutr.* 2006 Dec 28;3:45-53. [PMID: 18500972]
3. Anderson RA, Broadhurst CL, Polansky MM, et al. 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. [PMID: 14709014]
4. Rotshtyen Y, Zito SW, Application of modified in vitro screening procedure for identifying herbals possessing sulfonyleurea-like activity. *J Ethnopharmacol.* 2004 Aug;93 (2-3):337-44 [PMID: 15234774]
5. Sievenpiper JL, Arnason JT, Leiter LA, Vuksan V. Variable effects of American Ginseng: a batch of American ginseng (*Panax quinquefolius* L.) with a depressed ginsenoside profile does not affect postprandial glycemia. *Eur J Clin Nutr.* 2003 Feb; 57 (2):243-8 [PMID: 12571655]
6. Natural Medicines Comprehensive Database. <http://www.naturaldatabase.com>. [accessed 1.29.07]
7. Shanmugasundaram, E.R.B., et.al. Use of gynema slyvestre leaf extract in the control of blood glucose in insulin-dependent diabetes mellitus. *J of Ethnopharmacol* 1990;30:228-94 [PMID: 2259216]
8. Rizvi SI, Zaid MA, Anis R, Mishra N. Protective role of tea catechins against oxidation-induced damage of type 2 diabetic erythrocytes. *Clin Exp Pharmacol Physiol.* 2005 Jan-Feb; 32 (1-2): 70-5 [PMID: 15730438]
9. Anderson RA, Polansky MM Tea enhances insulin activity. *J Agric Food Chem.* 2002 Nov 20; 50(24): 7182-6. [PMID: 12428980]
10. Koyama Y et.al. Effects of green tea on gene expression of hepatic gluconeogenic enzymes in vivo. *Planta Med.* 2004 Nov; 70(11):1100-2 [PMID: 15549673]
11. Han MK. Epigallocatechin gallate, a constituent of green tea, suppresses cytokine-induced pancreatic beta-cell damage. *Exp Mol Med.* 2003 Apr 30;35(2):136-9 [PMID:12754418]
12. Negrisanu G, Rosu M, Bolte B, Lefter D, Dabelea D Effects of 3-month treatment with the antioxidant alpha-lipoic acid in diabetic peripheral neuropathy. *Rom J Intern Med.* 1999 Jul-Sep;37(3):297-306 [PMID: 15532308]
13. de Champlain J. et.al. Oxidative stress in hypertension. *Clin Exp Hypertens.* 2004 Oct-Nov; 26 (7-8): 593-601 [PMID: 15702613]
14. Preuss HG, Bagchi M. Protective effects of novel niacin-bound chromium complex and a grape seed proanthocyanidin extract on advancing age and various aspects of syndrome X. *Ann NY Acad Sci.* 2002 May; 957:250-9. [PMID: 12074977]

Formulated To Exclude

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

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