DESIGNS FOR HEALTH®, INC. PROUDLY ANNOUNCES:

Chromium Synergy™

New & Improved Formula

designs for health®
Science first.

Chromium Synergy is improved and now offers the best chelated minerals available, from Albion Advanced Nutrition, yet still at the same low price. The chromium in Chromium Synergy is now fully chelated to glycine and nicotinic acid for enhanced absorption. All the nutrients in this formula play different important roles in insulin function. It is still in a base of cinnamon powder, also known for its ability to assist blood sugar control.

Supplement Facts

Serving Size 1 capsule
Servings Per Container 90

Amount Per Serving		% Daily Value
Vitamin D (cholecalciferol)	100 IU	25%
Zinc (Chelazome® bis-glycinate chelate)	10 mg	66%
Manganese (Chelazome® bis-glycinate chelate)	1 mg	50%
Chromium (Chelavite® nicotinate-glycinate chelate)	300 mcg	250%
Taurine	500 mg	*
Vanadium	100 mcg	*

*Daily Value not established

Other ingredients: Gelatin, cinnamon powder, magnesium stearate.

WHAT ARE TRUE CHELATES?

For minerals to properly form coordinate covalent bonds with the amino groups of amino acids, they must be mixed in liquid solution. These bonds cannot form in a dry environment by simply mixing ingredients together in powdered form. True chelates need to be small enough in molecular weight to be absorbed by the body (not more than 800 daltons). True chelates are absorbed better than mineral salts and are better retained in body tissue. Chelates are better tolerated than non-bound mineral salts. Since they are better tolerated and absorbed they are less likely to cause loose stools or other gastrointestinal discomfort.

The ligands that the minerals are chelated to are important, as the chelated compound will remain chelated throughout the gut and into the bloodstream. Mineral salts from non-true chelates break apart far sooner, usually in the stomach, leaving the body with the extra compound to deal with and the mineral in ionic form. Ionic minerals can interfere with the absorption of other minerals such as iron and zinc whereas chelated minerals do not. Albion minerals are mainly chelated with the amino acid glycine due to its low molecular weight. Glycine is very safe, even in high doses. It helps to slow the degeneration of muscle tissue by helping to synthesize creatine. Glycine is involved in energy production, formation of amino acids for the immune system, CNS function, and prostate health. Studies show some other great benefits of glycine including accelerating recovery from alcohol-induced liver injury.[1]

Reference

1. Yin et al. Glycine accelerates recovery from alcohol-induced liver injury. J Pharmacol Exp Ther, Aug. 1998. 286(2):1014-9

To place an order, or for more information, please call us at **(800) 847-8302**, or visit us on the web at **www.designsforhealth.com**

CHROMIUM NICOTINATE IS SAFER THAN CHROMIUM PICOLINATE

Cytotoxicity and oxidative mechanisms of different forms of chromium.
Toxicology. 2002 Oct 30;180(1):5-22.
Bagchi D, Stohs SJ, Downs BW, Bagchi M, Preuss HG.

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Chromium exists mostly in two valence states in nature: hexavalent chromium [chromium(VI)] and trivalent chromium [chromium(III)]. Chromium(VI) is commonly used in industrial chrome plating, welding, painting, metal finishes, steel manufacturing, alloy, cast iron and wood treatment, and is a proven toxin, mutagen and carcinogen. The mechanistic cytotoxicity of chromium (VI) is not completely understood, however, a large number of studies demonstrated that chromium(VI) induces oxidative stress, DNA damage, apoptotic cell death and altered gene expression. Conversely, chromium(III) is essential for proper insulin function and is required for normal protein, fat and carbohydrate metabolism, and is acknowledged as a dietary supplement. In this paper, comparative concentration- and time-dependent effects of chromium(VI) and chromium(III) were demonstrated on increased production of reactive oxygen species (ROS) and lipid peroxidation, enhanced excretion of urinary lipid metabolites, DNA fragmentation and apoptotic cell death in both in vitro and in vivo models. Chromium(VI) demonstrated significantly higher toxicity as compared with chromium(III). To evaluate the role of p53 gene, the dose-dependent effects of chromium(VI) were assessed in female C57BL/6Ntac and p53-deficient C57BL/6TSG p53 mice on enhanced production of ROS, lipid peroxidation and DNA fragmentation in hepatic and brain tissues. Chromium(VI) induced more pronounced oxidative damage in multiple target organs in p53 deficient mice. Comparative studies of chromium(III) picolinate and niacin-bound chromium(III), two popular dietary supplements, reveal that chromium(III) picolinate produces significantly more oxidative stress and DNA damage. **Studies have implicated the toxicity of chromium picolinate in renal impairment, skin blisters and pustules, anemia, hemolysis, tissue edema, liver dysfunction, neuronal cell injury, impaired cognitive, perceptual and motor activity, enhanced production of hydroxyl radicals, chromosomal aberration, depletion of antioxidant enzymes, and DNA damage. Recently, chromium picolinate has been shown to be mutagenic and picolinic acid moiety appears to be responsible as studies show that picolinic acid alone is clastogenic. Niacin-bound chromium(III) has been demonstrated to be more bioavailable and efficacious and no toxicity has been reported. In summary, these studies demonstrate that a cascade of cellular events including oxidative stress, genomic DNA damage and modulation of apoptotic regulatory gene p53 are involved in chromium(VI)-induced toxicity and carcinogenesis. The safety of chromium(III) is largely dependent on the ligand, and adequate clinical studies are warranted to demonstrate the safety and efficacy of chromium(III) for human consumption.**