



# GBX SUPERFOOD™

Microbiome-Boosting Fruits  
and Vegetables\*



**amare**®  
GLOBAL

THE MENTAL WELLNESS COMPANY

## TECHNICAL DATA



# GBX SUPERFOOD™

GBX SuperFood™ provides the phytonutrient equivalent of three servings of fruits and vegetables per scoop. This phytobiotic-rich blend delivers cellular level anti-stress benefits and helps protect cells from a variety of different stressors, helping the brain and gut run at peak efficiency.\*

## KEY INGREDIENTS

**Anti–Stress Phytobiotic Proprietary Blend** — Delivers cellular level anti-stress benefits and helps protect cells from a variety of different stressors, helping the brain and gut run at peak efficiency.\*

**ETAS™** — Enzyme-treated Japanese asparagus stalk is a proprietary extract of *Asparagus officinalis* that comes from the stalks closest to the root of the plants. The nutrients that come from this area of the asparagus have the special ability to help the body create HSP70, which is a heat shock protein that helps protect from stressors, repairs damaged cells, and balances cytokine response. This biochemical reaction improves cognitive performance, reduces fatigue and improves stress response.

ETAS works by increasing the production of HSP70 — an intracellular protein produced naturally by the body when it encounters a stressor, such as extreme heat. HSP70 has many beneficial functions. It repairs damaged cells, tips the balance from excitatory cytokines to inhibitory ones and serves as an antioxidant. Unfortunately, the heat shock response to stressors of all kinds decreases with age. Human clinical research has shown that ETAS significantly increases the expression of HSP70 at a dosage of 100 mg elemental ETAS per day.

It is clinically shown that ETAS effectively:

- Increases quality of sleep
- Helps with brain health
- Alleviates occasional stress by improving heart rate variability
- Raises cognitive performance, reduces fatigue and improves stress response

**Spirulina** — A natural algae that provides potent nutrients and is a good source of antioxidants, B vitamins, high in proteins, and helps with gastric integrity/balance.

**Fruit/Veggie Blend** — Includes beet root, carrot root, spinach leaf, broccoli stem, kale, strawberry, pomegranate fruit, and tart cherry fruit.

- Provides three servings of natural fruits and veggies for comprehensive nutrition in a convenient single delivery.

## Gut Integrity Prebiotic Proprietary Blend –

**IsoFiber™ (Iso-Malto-Oligosaccharides)** — IMOs are special combination of naturally occurring plant fibers that are clinically shown to improve the growth of the gut bacteria. They act as specific prebiotic that feeds the probiotic genus Lactobacillus and Bifidiobacterium, which are used in this product. IMOs provide a variety of benefits for digestive health, acts as a prebiotic, has a low glycemic index, and helps with oral health. IMOs are also digestive resistant, meaning that they are digested/fermented in the end of the digestive system in which colonic bacteria produces short chain fatty acids that metabolize in the liver, which helps with blood glucose levels, cholesterol and mineral absorption.

**Digestive Resistant Maltodextrin** — DRM is a soluble corn fiber that helps with gastric motility or intestinal regularity. DRM passes through the stomach and small intestine undigested and becomes fermented by the microflora in the large intestine.

**Inulin** — A plant polysaccharide that is found in the roots of plants that helps curb appetite, improves gut health by helping with bulking in the intestinal tract, and heart health by acting like a prebiotic.

**Apple Fiber** — Helps with bulking in the intestinal tract, and heart health.

**Chia Seed** — Good source of omega-3 fatty acids, fiber, antioxidants, proteins, and calcium. Good for heart and brain health.

**Flax Seed** — Good natural source of omega-3 fatty acids, lignans and fiber. Helps with heart and brain health.

# CLINICAL STUDIES

**Journal of Food Science Ito T. et al. “Enzyme-Treated Asparagus Extract Promotes Expression of Heat Shock Protein and Exerts Antistress Effects.” 2014 79(3): 413–419.**

**Topic:**

Does ETAS exert antistress effects through increasing HSP70 expression?

**Background:**

Heat shock proteins (HSPs) are a family of proteins expressed by the cells and which have diverse functions under various physiological conditions. HSPs are thought to have anti-stress effects by reducing cortisol and chronographanin levels. Some of the HSPs, such as HSP70, are known as a chaperone, which is expressed in a variety of organs such as skin, the digestive tract, liver, and kidney. Asparagus provides numerous health benefits, including cancer and cardiovascular disease prevention. In addition, enzyme-treated asparagus extract (ETAS) has been developed by scientists as a functional material produced from asparagus stem useful for stress reduction. The isolated compound is structurally unique and has been shown to induce HSP70 expression. In animal studies, intake of ETAS dose-dependently ameliorated stress, reducing corticosterone, in accordance with upregulation of HSP70. Preliminary studies showed ETAS has neuroprotective effects and attenuates cognitive impairment in accelerated-senescence mice.

**Study Type:**

Randomized human clinical intervention trial

**Study Design:**

Subjects were randomly divided into three groups: a low-dose group (10 subjects), middle-dose group (5 subjects), and high-dose group (5 subjects). The subjects ingested ETAS capsules of each dose daily for 7 days, and whole blood was collected before and after supplementation. The expression level of HSP70 mRNA in leukocytes was assessed through real-time PCR measurement.

**Subjects:**

20 healthy male volunteers without excess stress Dosage 75 mg/day (low dose), 100 mg/day (middle dose), and 150 mg/day (high dose) of ETAS for a week

**Results:**

Intakes of 100 mg/day and 150 mg/day were associated with increased expression of HSP70 mRNA compared with base line values ( $154.9 \pm 24.9\%$  and  $159.2 \pm 24.9\%$ , respectively), while the low-dose group showed no significant elevation ( $101.6 \pm 8.8\%$ ).

**Conclusion:**

Combining the results from this human clinical trial and other animal studies, we can conclude that ETAS might contribute to the improved quality of sleep and reduced level of mental stress through upregulating the expression level of HSP70.

## Presented at the 35th European Society for Clinical Nutrition and Metabolism (ESPEN) Congress, Leipzig, Germany. 2013 Waki H, et al. Effect of Enzyme-treated asparagus (ETAS) on the Stress Response Substance in a Clinical Trial.

### Topic:

The aim of this study was to examine the effectiveness of ETAS on the stress response and related dysphoria (feelings of unhappiness).

### Background:

Stress effects result in fatigue and dysphoria; however, a heat-shock protein (HSP)-inducing agent may be able to counteract those effects. A fermented stem extract of asparagus known as ETAS at relatively low dosages may have an effect in inducing the HSP response. ETAS affects stress response to stressful stimuli and can be assessed experimentally through the use of a questionnaire survey of condition, sitting position, and mental arithmetic for psychological stress. The autonomic-nervous functions are measured by heart rate variability. The levels of serum cortisol and plasma catecholamine can be measured from extracted blood as further indicators of stress response. In addition, saliva can also be tested for the concentration of secretory immunoglobulin A (sIgA) and cortisol. Other indications are dysphoria stimulation due to the adverse effects of mental arithmetic.

### Study Type:

Human clinical intervention trial

### Study Design:

A randomized, double-blind, placebo-controlled crossover trial that used a questionnaire survey of the subject's condition of energy or fatigue in a sitting position and utilized mental arithmetic to cause psychological stress. In the mental arithmetic phase, the autonomic-nervous functions were measured by heart rate variability analyses using an active orthostatic test and were analyzed in real time with heart rate variability wave-analysis software. After the mental arithmetic test, blood and saliva were extracted, and catecholamine stress hormones in the blood, sIgA (saliva immune factor that is reduced from stress), and cortisol in saliva were analyzed.

### Subjects:

25 healthy volunteers

### Results:

After the mental arithmetic, the correction value of sIgA level in saliva (mg/mg) increased significantly (Day 0:  $208.11 \pm 168.20$ ; Day 28:  $298.66 \pm 154.71$ ). On the other hand, the levels of cortisol and catecholamine did not change. The main subjective results of Day 0 to Day 28 in the ETAS group in the questionnaire survey were rated by condition in terms of "Feel tired," "Hard to get up," and "Feel heavy." This was used to show the effectiveness of results. The number of answers and correct answers of the mental arithmetic increased significantly. After the mental arithmetic, two items of "depression falling" and "fatigue" in POMS showed effective results.

### Conclusion:

These data suggest that ETAS intake may reduce a tired feeling in daily living and have beneficial effects in the response to dysphoria stress. ETAS is effective in reducing fatigue and feelings of unhappiness (dysphoria) caused by stress.

## Journal of Nutritional Science and Vitaminology Takanari J. et al. “Effect of Enzyme-Treated Asparagus Extract (ETAS) on Psychological Stress in Healthy Individuals.” 2016 62: 198–205.

### Topic:

What effect does ETAS have on psychological stress in healthy individuals?

### Background:

Excess or chronic stress disrupts the body’s healthy stress response, which could lead to the development of mental diseases such as depression and anxiety. Physical and psychological symptoms accompanying chronic stress result in impaired concentration, reduced memory, and lower work capacity — which all strongly affect the quality of life for healthy individuals. ETAS is produced from freshly harvested unused stems of asparagus (*Asparagus officinalis* L.). After sterilization, they are spray-dried in preparation for creation of the ETAS powder. A previous study in healthy subjects with anxiety about sleep showed administration of ETAS had a tendency to improve autonomic nerve balance, decrease levels of salivary chromogranin A (a psychological stress marker), decrease the incidence of early-morning awakening, and improve dreams. These findings suggested the potential efficacy of long-term administration of ETAS in reducing psychological stress. The safety of ETAS was already demonstrated by negative toxicity results in the Ames test.

### Study Type:

Randomized, double-blind, placebo-controlled crossover human clinical study

### Study Design:

The total period of the study was 10 weeks, consisting of two 4-week treatment arms (ETAS or placebo), separated by a 2-week washout period. 25 subjects were randomly assigned to one of two groups. Group A (n = 12) and Group B (n = 13) received the administration in a double-blind fashion. In Group A, subjects consumed 3 ETAS capsules per day, taken after dinner for 4 weeks. After a 2-week washout period, subjects in Group A consumed 3 placebo capsules per day, taken again after dinner for 4 weeks. In the same manner, subjects in Group B consumed placebo for 4 weeks, followed by a 2-week washout period, and then consumed ETAS capsules for 4 weeks.

### Subjects:

25 healthy volunteers (19.8 ± 1.9 years old)

### Dosage:

150 mg/day of ETAS for 28 days

## Journal of Nutritional Science and Vitaminology Ito T, et al. "Effects of Enzyme-Treated Asparagus Extract on Heat Shock Protein 70, Stress Indices, and Sleep in Healthy Adult Men." 2014 60(4): 283-290.

### Topic:

What effect does ETAS have on sleep-related physiological stress parameters?

### Study Type:

Randomized, double-blind, placebo-controlled crossover human clinical trial

### Study Design:

Subjects were randomly assigned to one of two groups: Group A (n = 9) and Group B (n = 9). Group A first took placebo after dinner for 7 days, and after a 2-week washout period, consumed ETAS capsules after dinner for 7 days. In the opposite manner, Group B (n = 9) received ETAS first and then placebo after a 2-week washout period. The blood and salivary concentration of stress hormones, the influence on sleep, and the hematological and biochemical parameters were assessed before and after intake of each sample (base line and final). A questionnaire survey including the Athens Insomnia Scale (AIS), visual analogue scale (VAS), and Oguri-Shirakawa-Azumi sleep inventory MA version (OSA-MA) was conducted.

### Subjects:

18 healthy adult men (24–59 years of age) concerned about sleep

### Dosage:

150 mg/day of ETAS

### Results:

Serum and salivary cortisol levels after 7 days of daily intake of placebo were significantly increased in comparison with base line values (serum:  $4.9 \pm 2.1$  to  $6.6 \pm 2.3$   $\mu\text{g}/\text{dL}$ ; saliva:  $0.08 \pm 0.04$  to  $0.14 \pm 0.09$   $\mu\text{g}/\text{dL}$ ), while no remarkable alterations were noted following ETAS intake (serum:  $5.7 \pm 1.9$  to  $6.3 \pm 2.3$   $\mu\text{g}/\text{dL}$ ; saliva:  $0.11 \pm 0.08$  to  $0.13 \pm 0.06$   $\mu\text{g}/\text{dL}$ ). Salivary chromogranin A was significantly reduced between pre- and post-consumption of ETAS ( $9.4 \pm 6.8$  vs.  $5.7 \pm 3.2$   $\text{pmol}/\text{mL}$ ,  $p < 0.01$ ), while no differences were exhibited following placebo intake. ETAS intake was significantly associated with reduced actual sleep time among those with sleep efficiency over 90%, compared with the placebo group ( $p < 0.05$ ), and showed a tendency to improve the sleep time of the subjects with less than 90% sleep efficiency. For subjects with actual sleep time over 395 minutes, supplementation with ETAS resulted in decreased levels of s-CORT and s-CgA. The AIS score for "awakening earlier than desired" was significantly improved among those taking ETAS compared with placebo ( $p < 0.05$ ). The OSA-MA score reported less frequency of dreaming and nightmares when subjects consumed ETAS ( $p < 0.05$ ). ETAS also significantly contributed to increased appetite by VAS score ( $p < 0.01$ ). No significant differences were noted in any parameter, including total sleep time, actual sleep time, sleep latency, sleep efficiency, or waking episodes between placebo- and ETAS-treated subjects.

### Conclusion:

ETAS may be beneficial to modulate the autonomic nervous system balance and enhance good quality of sleep

**Journal of Nutritional Science and Vitaminology Ito T, et al. "Effects of Enzyme-Treated Asparagus Extract on Heat Shock Protein 70, Stress Indices, and Sleep in Healthy Adult Men." 2014 60(4): 283-290.**

**Topic:**

What effect does ETAS have on the expression of HSP70 mRNA in blood and the autonomic nervous system?

**Study Type:**

Randomized, double-blind, placebo-controlled human interventional clinical trial

**Study Design:**

Subjects (25–56 years of age) were randomly divided into a placebo group (n = 10) and an ETAS group (n = 10). The placebo group and ETAS group each ingested 3 capsules containing either placebo or ETAS (50 mg of ETAS per capsule, 3 capsules per day) at the same time after dinner for 7 days. In all subjects, the mRNA expression level of HSP70 in blood and the autonomic nervous condition were evaluated at base line and 7 days later.

**Subjects:**

20 healthy adult male volunteers

**Dosage:**

150 mg of ETAS

**Results:**

In both groups, the expression level of HSP70 mRNA after sample intake was higher than that of each base line. The expression level (% of base line) was greatly enhanced in the ETAS group compared with the placebo group. But the difference between ETAS and placebo groups was not statistically significant. Supplementation with ETAS was associated with improvement in all autonomic nervous condition parameters