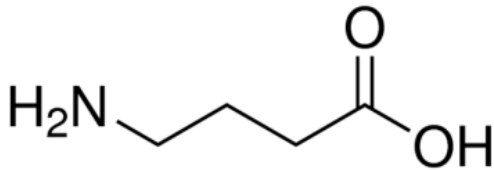


## GABA 750 mg

### TECHNICAL SUMMARY

GABA (Gamma-Aminobutyric Acid) is a non-protein amino acid that is naturally produced in the body.\* GABA is the brain's main inhibitory neurotransmitter and healthy levels are associated with a relaxed mood.\* GABA also plays a central role in regulating intercellular communication and normal cognition.\*

#### Structure formula:



**Chemical name:**  $\gamma$ -Aminobutyric acid

**Allergen and Additive Disclosure:** Not manufactured with wheat, gluten, soy, milk, egg, fish, shellfish, or tree nut ingredients. Produced in a GMP facility that processes other ingredients containing these allergens.

**Delivery Form:** Veg Capsules

### ROLE AS NUTRIENT/FUNCTION

GABA is a major inhibitory neurotransmitter. It functions via GABA receptors present at the surface of nervous cells at the receiving end of nerve impulses.\* It helps regulate brain excitability more specifically via GABA<sub>A</sub> receptors.\*

### NATUROKINETICS®

**Liberation:** The disintegration of the vegetable capsule using a USP-testing method of disintegration occurs between zero and 60 minutes.

**Absorption:** Laboratory data suggest that GABA can be taken up by the intestinal cells via amino acid transporters shared with other similar amino acids (such as beta-alanine). After oral ingestion of 2 g GABA, in healthy volunteers, GABA is rapidly absorbed with a maximum plasma concentration of 688 ng/mL attained in 1.5 hours. (Figure 1)

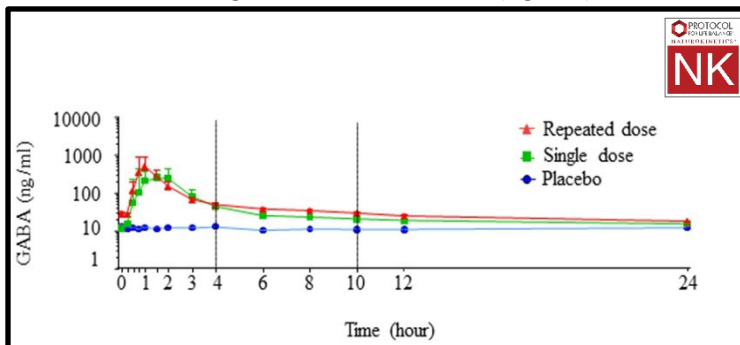


Figure 1: Concentration-time profiles for GABA. Red line: 2 g three times daily for 7 days. Green line: single dose (2g) in 12 healthy volunteers.

**Distribution:** Much controversy remains regarding GABA's ability to cross the blood-brain barrier (BBB). Data from animal experiments suggest that

## Supplement Facts

Serving Size 1 Veg Capsule

### Amount Per Serving

GABA (Gamma-Aminobutyric Acid) 750 mg\*\*

\*\* Daily Value not established.

Other ingredients: Hypromellose (cellulose capsule), Ascorbyl Palmitate, Stearic Acid (vegetable source) and Silicon Dioxide.

- **Calming Neurotransmitter\***

**SUGGESTED USAGE:** Take 1 capsule 1 to 2 times daily as needed, preferably with juice or water on an empty stomach, or as directed by your healthcare practitioner.

GABA can cross the BBB and that the permeability of the BBB to GABA varies with age. However, other laboratory experiments suggest that GABA concentration in the brain is tightly regulated, casting doubts on the ability for oral supplementation to have a meaningful clinical impact on the central nervous system. More recently, clinical data from studies on healthy individuals indirectly suggest that after oral ingestion, GABA is able to reach the central nervous system.

**Metabolism:** GABA is catabolized by the enzyme GABA transaminase (GABA-T) and other enzymes involved in the GABA shunt, resulting in the formation of succinate, which enters the citric acid cycle. Within the citric acid cycle, succinate contributes to the formation of alpha-ketoglutarate, which is subsequently used to form glutamate. Glutamate acts as a precursor to GABA.

**Elimination:** After oral ingestion, GABA has a half-life of approximately 5 hours. In a clinical study, administration of 6 g of GABA per day for 7 days did not result in any accumulation of GABA in the plasma. GABA is metabolized and recycled through the citric acid cycle and the GABA shunt via a highly complex and regulated system.

### CLINICAL VALIDATION

GABA supplementation and its impact on nervous system function has been researched extensively in clinical settings.

- **Central nervous system relaxation support.\*** In a placebo-controlled clinical trial with 13 healthy volunteers between the ages of 21 and 35, a single oral administration of 100 mg of GABA resulted in statistically significant increase in the ratio of  $\alpha$  waves on the EEG 30 and 60 min following GABA administration ( $p < 0.05$  as compared to control); and statistically significant decrease in  $\beta$  waves ( $p < 0.05$  as compared to control) measured at the same periods; both indicating significant shift toward a relaxed state.\*

### SAFETY INFORMATION

**Tolerability:** GABA supplementation has been extensively studied for its tolerability in healthy individuals, demonstrating a favorable safety profile. Clinical trials have shown that GABA is generally well-tolerated, with typical side effects being mild and transient, including dizziness and

somnolence. These effects are often manageable and can be minimized by gradually increasing the dose during the initial phase of supplementation.

**Contraindications:** No known contraindications

### **INTERACTIONS**

**Drug Interactions:** Theoretically, concurrent use of GABA with drugs that lower blood pressure might increase risk of hypotension. Additionally, GABA might have additive sedative effects when used in conjunction with central nervous system (CNS) depressants. However, the clinical relevance of these concerns remains unclear.

**Supplement Interactions:** None known.

**Interaction with Lab Tests:** GABA can cause temporary increase in liver enzymes ALT (alanine aminotransferase) and AST (aspartate aminotransferase). Additionally, GABA impacts hormone regulation, potentially altering stress hormone levels like cortisol, and may influence metabolic markers such as glucose and insulin.

### **STORAGE**

Store in a cool, dry place, in the tightly sealed original container.