# GABAnol





#### **CLINICAL APPLICATIONS**

- Synergistic Blend of Amino Acids, Vitamins, Minerals and Dong Quai
- Helps Alleviate Muscle Soreness, Muscle Spasm and Promote Muscle Relaxation
- Helps Maintain Nervous System Balance

## MUSCULOSKELETAL HEALTH

GABAnol is a synergistic combination of gammaaminobutyric acid (GABA), glycine, magnesium, vitamin  $B_6$ and dong quai, which serves as a quick response supplement for muscle relaxation and discomfort. The combination of glycine and GABA act as inhibitory neurotransmitters, which help calm muscles and reduce the activity of the excitatory nervous system that can cause muscle spasms. Together with magnesium,  $B_6$  and dong quai, GABAnol serves as an excellent alternative to valerian-based products. One serving of GABAnol includes 250 mg GABA, 225 mg glycine, 100 mg magnesium and 150 mg dong quai.

#### **Overview**

GABA, the chief inhibitory neurotransmitter in the central nervous system, plays a key role in regulating muscle excitability. Both GABA and glycine act as calmatives for nerve impulses, controlling muscle contractions. GABA also supports the brain, preventing stress-related messages that trigger muscle spasms from reaching motor centers of the brain by occupying their receptor sites. Dong quai root extract has been used for centuries in Chinese traditional medicine to increase relaxation of the smooth muscles. Magnesium and  $B_6$  are known for their immediate effect on muscular relaxation. While other therapies with a similar mechanism may cause dependency when used over time, the natural ingredients in GABAnol are non-habit forming and work quickly to ease muscle tension.

#### **GABA**<sup>†</sup>

GABA itself is the primary inhibitory neurotransmitter in the brain and regulates other neurotransmissions to prevent overstimulation. One study found that after only 60 minutes of administration, GABA significantly increased alpha brain waves and decreased beta waves compared to water or L-theanine, indicating a significant calming effect on the nervous system. The same study also found GABA to support healthy Ig levels.<sup>1</sup> A randomized, single-blind, placebo-controlled, crossoverdesigned study found that among 63 adults given capsules containing 100 mg of GABA or a placebo, those who had taken GABA experienced diminished alpha band and beta band brain waves compared with placebo.<sup>2</sup>

#### **Glycine<sup>†</sup>**

Glycine is one of three amino acids needed for the synthesis of creatine, which supplies energy to nerve and muscle cells. Elevated amounts of glycine are found in the muscles, skin and other connective tissues. Glycine is also an inhibitory neurotransmitter, which works much like GABA. Research has shown it supports the induction of sleep and enhances sleep quality.<sup>3</sup> It is the primary amino acid that regulates neurotransmission in the brain stem and spinal cord and is a necessary co-factor in the activation of glutamate receptor. This action makes glycine a key component of maintaining nervous system balance and maintaining calm, relaxed muscles.

#### Dong Quai<sup>+</sup>

A perennial botanical native to China and Japan, dong quai is effective at easing post-exercise muscle soreness and has long been used medicinally for smooth muscle tension. Dong quai contains active ingredients called coumarins, which dilate blood vessels, balance the central nervous system and increase blood flow. One animal study found dong quai to significantly increase endurance swimming time and to promote healthy blood sugar, lactate, ammonia and creatine kinase levels in



mice (a primary indicator of proper cellular energy function). Dong quai also improved exercise performance and eased exercise-induced fatigue in mice.<sup>4</sup>

#### Vitamin B<sub>6</sub><sup>+</sup>

Vitamin  $B_6$  is required to convert glutamic acid to GABA in the body. Vitamin  $B_6$  is also a cofactor in many cellular biochemical reactions, including the release of glucose from glycogen and amino acid metabolism, including transamination, deamination and decarboxylation. Vitamin  $B_6$  is involved in the electron transport system during ATP production and requires magnesium to become biologically active. The vitamin also supports the use of magnesium within the cell.<sup>5</sup> It is a key factor in the methylation pathway, which is integral in many biochemical processes involving detoxification and cardiovascular, neurological, muscle and bone health. Effective methylation plays a role in the biosynthesis and breakdown of catecholamines and is important in maintaining a positive mental outlook and supporting adrenal health.

#### Magnesium<sup>+</sup>

Magnesium, the fourth most abundant mineral, participates in roughly 300-350 enzymatic reactions in the body. It aids in maintaining normal muscle and nerve function, blood pressure, heart rate, vasomotor tone, bone density, serum glucose levels, calcium absorption and immune response. In a double-blind, between group study, the effects of magnesium (350 mg/day for 10 days) on muscle soreness and performance in both college-aged males and females showed improved perceived recovery and a significant reduction in muscle soreness and perceived exertion.<sup>6</sup>

Magnesium deficiency is one of the most common nutrient deficiencies that can lead to unwanted side effects when left untreated. In a prospective observational study, serum magnesium levels were measured between the control group versus the experimental group, and it was concluded that magnesium is involved in the regulation of neuronal excitability.<sup>7</sup>

Because magnesium plays a significant role in regulating the influx of calcium into muscle cells, calcium can remain in the muscle cell for a longer period when magnesium is depleted, leading to cramping or muscle spasms. In a randomized, double-blind, placebo-controlled study, subjects suffering from nocturnal leg cramps received 226 mg of magnesium over a 60-day period. At the end of the study, subjects who were receiving the magnesium showed a significant decrease in magnitude and duration of nocturnal leg cramps and improvements in sleep quality versus the placebo group.<sup>8</sup>

#### Directions

1-2 capsules three times per day or as recommended by your health care professional.

#### **Does Not Contain**

Gluten, corn, yeast, artificial colors or flavors.

#### Cautions

Do not consume this product if you are pregnant or nursing.

### Supplement Facts

Serving Size 2 Capsules Servings Per Container 30

	Amount Per Serving	% Daily Value
Vitamin C (as Ascorbic Acid USP)	40 mg	44%
Vitamin B6 (as Pyridoxine Hydrochloride USP)	50 mg	2,941%
Magnesium (as DiMagnesium Malate)(Albion®)	100 mg	24%
Gamma Aminobutyric Acid (GABA)	250 mg	*
Glycine USP	225 mg	*
Dong Quai Root Extract	150 mg	*
* Daily Value not established.		

Other Ingredients: Microcrystalline Cellulose, Hypromellose (Natural Vegetable Capsules), Magnesium Stearate, Stearic Acid and Silicon Dioxide.

#### ID# 555060 60 Capsules



#### References

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- 3. Bannai M1, Kawai N. New therapeutic strategy for amino acid medicine: glycine improves the quality of sleep. *J Pharmacol Sci.* 2012;118(2):145-8. Epub 2012 Jan 27.
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- 8. Barna O, Lohoida P, Holovchenko Y, et al. A randomized, double-blind, placebo-controlled, multicenter study assessing the efficacy of magnesium oxide monohydrate in the treatment of nocturnal leg cramps. *Nutr J.* 2021 Oct 31;20(1):90. doi: 10.1186/s12937-021-00747-9.