



LIPOSOMAL LIPOCALM®

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LipoCalm® is a balanced blend of nutraceuticals designed to support parasympathetic balance, a peaceful mind, and a relaxed body. This formula includes PharmaGABA®, a naturally fermented form of the amino acid GABA (gamma-aminobutyric acid), along with the botanicals skullcap (*Scutellaria lateriflora*), passion flower (*Passiflora incarnata*), and Egyptian blue chamomile.

EDUCATION

GABA SUPPORTS RESTFUL SLEEP AND SUPPORTS MOOD

Sleep and mood disorders are increasingly common today¹, with about 50 to 70 million Americans affected by poor sleep and chronic sleep debt^{2,3}, and nearly 30% experiencing anxious symptoms over the course of a lifetime.^{4,5,6} Typical treatments include sleep hygiene⁷, medication^{8,9}, mindfulness exercises and cognitive behavioral training.¹⁰ Herbs and essential oils also have a long history of trusted use for restless thinking and poor sleep.^{11,12}

All of these approaches target GABA receptors, which densely populate the brain and central nervous system as well as the enteric nervous system.¹³ GABA is our most important inhibitory transmitter, preventing neurons from overfiring, and actively moving us into a parasympathetic rest, digest, repair and regenerate mode.¹⁴ Low GABA levels have been linked to sleep and mood disorder.^{15,16,17} During exposure to acute stress, GABA levels plummet.^{18,19,20,21} GABA is known as a sleep aid^{22,23,24} and has been found to increase calming alpha-wave patterns during challenging mental tasks.²⁵ Supplemental GABA may reach receptors in the enteric nervous system (the 'gut brain'), thereby calming digestion.²⁶

GABA is synthesized from the brain's primary excitatory neurotransmitter, glutamate. In optimal health, the two neurotransmitters oscillate in a binary fashion, shifting us in a fluid manner from a state of readiness and "fight or flight" to a state of relaxation and calm. However, the various stressors of modern life can deplete GABA levels and create an imbalance in these neurotransmitters, resulting in chronic "fight or flight" sympathetic activity that disrupts restorative sleep.

PHARMAGABA® OFFERS SUPERIOR ACTION FOR RELAXATION, SLEEP, ADDICTION AND IMMUNITY

PharmaGABA® is a naturally-sourced GABA produced via fermentation by *Lactobacillus hilgardii*, found in kimchi, a traditional Korean fermented cabbage dish. Kimchi is known to contain high amounts of natural, food-based GABA.²⁸ Naturally sourced GABA has been shown to promote relaxation and alpha wave activity; EEG results one hour after consuming PharmaGABA® demonstrated a significant increase in calming alpha waves, and a parallel decrease in beta waves associated with stress.²⁹



Supplement Facts

Serving Size: 2 mL (4 pumps)
Servings Per Container: 25

	Amount Per Serving	% Daily Value
Proprietary Blend	350mg	**
Highly purified phospholipids, gamma-Aminobutyric acid (as PharmaGABA®), Liquid Skullcap Herb extract (<i>Scutellaria lateriflora</i>), Liquid Passion Flower extract (<i>Passiflora incarnata</i>), Chamomile Flower oil		

**Daily Value not established

Other Ingredients: Water, glycerin, ethanol, tocopherol and natural mixed tocopherols

By dampening the stress response, PharmaGABA® may support learning and mental performance. When given to elementary school students in Japan, PharmaGABA® reduced mental tension and suppressed CgA (salivary chromogranin A), which is a marker of adrenal stress. Test performance also improved.²⁷

GABA-induced relaxation may be linked to an increase in immune function. When acrophobic individuals crossed a suspended bridge over a 150 foot canyon, those taking GABA maintained levels of Immunoglobulin A (IgA) during the crossing, and levels were higher upon completion. In contrast, a control group of acrophobics given a placebo experienced a sharp reduction in IgA during the activity. A second study with different individuals found that PharmaGABA® supplementation led to a 20% decrease in CgA at the halfway point across the bridge, while a control group had a 20% increase.³⁰

PharmaGABA® may help people fall asleep more quickly and easily. A double blind study found that this form of GABA increased sleep efficiency and valuable non-REM sleep time, significantly shortened sleep latency (the time to fall asleep) and increased the total non-rapid eye movement (non-REM) sleep time. This form of GABA was quickly absorbed, with blood levels the highest 30 minutes after oral administration, consistent with its strong effect in the early stage of sleep.³¹

Addictions—such as alcohol or the nicotine in cigarettes—can be refractory in part because they target and “reward” the GABAergic system and GABA receptors.^{32,33} In a double blind study of tobacco users, PharmaGABA® significantly reduced the desire to continue smoking. Lower levels of CgA were observed in the PharmaGABA® group, suggesting that the stress of quitting smoking was mitigated by GABA.

Though there has been debate as to whether oral GABA can cross the blood-brain barrier, GABA's ability to modulate gut receptors suggests that it may affect the central nervous system through the vagus nerve, the 10th cranial nerve, which is a fundamental component of the parasympathetic branch of the autonomic nervous system.³⁴

POTENT PHYTONUTRIENTS REGULATE GABA NEUROTRANSMISSION

Nervousness and poor sleep have been managed with botanical medicines since antiquity.³⁵ The efficacy of traditional botanicals may rely on their broad action across multiple populations of GABAergic neurons located throughout the brain. New research has shown each GABA subpopulation offers specialized functions such as orchestrating EEG activity in NREM and REM sleep.¹²

Skullcap (*Scutellaria lateriflora*), passion flower (*Passiflora incarnata*) and chamomile (*Matricaria chamomilla*) are widely used in European and American traditional herbal medicine to allay tension and support relaxation and sleep.^{36,37,38} Skullcap contains unique flavonoids thought to bind to GABA receptors as well as serotonin receptors.^{39,40} Skullcap has been shown to promote relaxation and tranquility.⁴¹ Passion flower, a tendril-bearing vine with purple and white blossoms, has long been used in folk medicine for sleep, mood, worry and more.^{42,43,44} It is high in GABA⁴⁵ and contains potent flavonoids, such as apigenin, with an affinity for both GABA-A and GABA-B receptors^{46,47} and has been shown to reduce restless thinking via its GABA receptor affinity.⁴⁸ It is thought that passion flower may also be supportive in addictive scenarios.⁴⁹

Finally, chamomile is one of our most revered and ancient medicinal herbs, with a long history of folk use for calmness, relaxation and sleep.⁵⁰ Egyptian chamomile oil is a fragrant, midnight-blue essential oil that contains numerous potent lactones, glycosides, flavonoids and terpenoids that contribute to its flavor, fragrance and popularity.⁵¹ In particular, it is high in apigenin, which binds to GABA receptors.^{52,53} Studies show it can reduce symptoms of general nervousness⁵⁴ and improve sleep.⁵⁵

Quicksilver Delivery Systems® improve upon liposomal and emulsification technology with smaller, more stable particles made from the highest grade ingredients available. In addition to exceptional absorption rates, these tiny liposomal and nanoemulsified particles enhance the lymphatic circulation of nutrients and intracellular delivery, after ingestion.