

# LITHIUM OROTATE



## CLINICAL APPLICATIONS

- Promotes a Positive Mental Outlook
- Supports Detoxification Enzymes in the Brain
- Boosts Neurotransmitter Activity

## ESSENTIAL NUTRITION

Lithium is a trace mineral that has long been used for promoting a positive mood. In addition to supporting a healthy outlook and emotional wellness, low dosages of lithium have been shown in the research to impart other benefits, supporting the brain's natural detoxification process, providing antioxidant support and promoting the natural balance of brain neurotransmitters. Lithium orotate is the lithium salt of orotic acid, commonly used to boost mood. This formulation of Lithium Orotate includes 10 mg of the trace mineral per capsule for a wide range of protocols.

### Overview

Lithium orotate consists of lithium, an alkali metal, and orotic acid, a compound produced naturally in the body. This mineral is similar to sodium and iodine. Though its exact mechanism of action in the brain is still unidentified, lithium has been shown in the research to boost neurotransmitter activity, including that of dopamine and serotonin, and to reduce the activity of the excitatory brain chemical glutamate. It also plays a role in the gene expression of natural detoxification enzymes in the brain, including glutathione S-transferase offering important brain antioxidant protection, contributing to better cognitive health and memory. Other research has shown it to increase DHA in the brain,<sup>1</sup> and even to promote cognitive longevity.

### Deficiency<sup>†</sup>

Lithium deficiency in certain insulin-sensitive tissues may be associated with blood sugar imbalance<sup>2</sup>. Low levels have been found in children with developmental delay, and individuals with attention deficit, nervousness, lack of focus or lack of sleep.

### Neurotransmitter and Mood Support<sup>†</sup>

Lithium is thought to help regulate the neurotransmitter glutamate by keeping the amount of glutamate between brain cells at a stable, healthy level to support healthy brain function. The mineral has been shown to be neuroprotective and to prevent neuronal cell death from free radical stress, effectively protecting neurons from glutamate-induced, NMDA receptor-mediated free radical damage in animals. In effective doses, lithium reduces neurological deficits.<sup>3,4</sup> In animal models, lithium was also found to promote increased cytoprotective B-cell activity.<sup>5</sup> Research has also found using lithium, in a long-term low-dose support, promotes healthy brain aging.<sup>6</sup>

### Brain Detoxification Support<sup>†</sup>

Research has also shown lithium to support the brain's natural detoxification process. It has shown potential as a neuroprotective agent against Aluminum-induced oxidative stress and shows promise to protect the brain against free radical damage.<sup>7</sup> In animal models, lithium increased intracellular glutathione levels and reduced oxygen metabolite damage, suggesting that it selectively boosts glutathione-dependent enzymes to protect against free radical stress.<sup>8</sup>

<sup>†</sup> These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

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## Directions

1 capsule 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. Consult your physician for further information.

Supplement Facts <sup>v4</sup>		
Serving Size 1 Capsule		
Servings Per Container 60		
	Amount Per Serving	% Daily Value
Lithium (as Lithium Orotate)	10 mg	*
* Daily Value not established.		

ID# 270060 60 Capsules

## References

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6. Zarse K, Terao T, Tian J, Iwata N, Ishii N, Ristow M. Low-dose lithium uptake promotes longevity in humans and metazoans. *Eur J Nutr.* 2011 Aug;50(5):387-9. *Epub* 2011 Feb 8.
7. Bhalla P, Dhawan DK. Protective role of lithium in ameliorating the aluminium-induced oxidative stress and histological changes in rat brain. *Cell Mol Neurobiol.* 2009 Jun;29(4):513-21. *Epub* 2009 Jan 29.
8. Shao L, Cui J, Young LT, Wang JF. The effect of mood stabilizer lithium on expression and activity of glutathione s-transferase isoenzymes. *Neuroscience.* 2008 Jan 24;151(2):518-24. *Epub* 2007 Nov 13.

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