

*Melissa officinalis* (1)

## Lemon Balm

### Indications

Hypertension, arrhythmia and nervous palpitations, anxiety, and insomnia.

### Mechanism of Action

*Melissa* contains phenolic acid derivatives such as rosmarinic and the related lithospermic and chlorogenic acids,<sup>1</sup> and it is a natural inhibitor of angiotensin-converting enzymes.<sup>2</sup>

Rosmarinic acid and the triterpenoids oleanolic acid and ursolic acid inhibit  $\gamma$ -aminobutyric acid (GABA) transaminase activity, resulting in increased GABA levels in the brain.<sup>3</sup> This mechanism is believed to contribute to anxiolytic and hypotensive effects. Aromatic essential oils including citral, neral, geranial, citronellal, and caryophyllene are also credited with anxiolytic effects.<sup>4</sup>

### Evidence-Based Research

GABA transaminase is an enzyme targeted in the therapy of anxiety, epilepsy, and related neurological disorders. In animal studies, rosmarinic acid found in *Melissa* has been shown to inhibit GABA transaminase by 40% at 100  $\mu$ g/mL. Whole *Melissa* extracts contain not only rosmarinic acid but also additional GABA inhibitors that are believed to offer synergistic effects.<sup>5</sup>

Animal studies show *Melissa* extracts to have mild protective effects against reperfusion-induced lethal ventricular arrhythmias in rats.<sup>6</sup>

Heart palpitations are commonly associated with stress. One human randomized controlled trial dosed either 500 mg of *Melissa* twice daily or placebo for 2 weeks to patients experiencing regular heart palpitations and then evaluated the results using the patients' subjective assessments of the frequency and intensity of episodes. Secondary outcomes assessed included somatization, anxiety and insomnia, social dysfunction, and severe depression. *Melissa* reduced frequency of palpitation episodes and significantly reduced the number of anxious patients in comparison to the placebo.<sup>7</sup>

### Safety in Pregnancy and Breastfeeding

No studies have been identified that test the safety of *Melissa* in either pregnancy or breastfeeding.

### General Safety

*Melissa* is generally considered to be safe and well tolerated within recommended dosing ranges.<sup>1</sup>

## Dosage

This herb is generally considered safe at doses of 600 mg and up to doses as high as 1800 mg/day of the crude leaf.

## Traditional Uses

*Melissa officinalis* goes by the common name lemon balm because of the strong lemon aroma released from the leaves. This low-growing, herbaceous plant has been used traditionally for mood disorders, insomnia, migraines, infections, the symptoms of hyperthyroidism, gastric conditions, bronchial complaints, and hypertension. *Melissa* contains rosmarinic acid, a phenolic compound derived from caffeic acid that is credited with many anti-inflammatory effects.

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## References

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