**Indications**

Cardiac insufficiency, tachycardia or other arrhythmias, hypertension, stress and anxiety, and hyperthyroidism.

**Mechanism of Action**

*Leonurus cardiaca* contains monoterpenes, diterpenes, triterpenes, nitrogen-containing compounds, phenylpropanoids, flavonoids and phenolic acids, lectins, and phytosterols as well as volatile oils, sterols, and tannins. Quality *Leonurus* products should contain at least 0.2% flavonoid, often standardized to hyperoside content. In addition to these ubiquitous compounds, *Leonurus* contains iridoid glycosides such as leonuride and the alkaloids leonurine, leonurinine, and stachydrine, all credited with medicinal effects.

Leonurine is a guanidine alkaloid shown to have cardioprotective, hypotensive, uterotonic, and neuroprotective effects. Leonurine has been reported to be a constituent of *Leonurus cardiaca*; however, some assays could not confirm its presence in *L. cardiaca*. Related alkaloids, including synthetic versions, may act in similar ways. Animal investigations suggest that leonurine ameliorates the progression of atherosclerotic lesions and vascular dysfunction via suppression of inflammatory factors and oxidative stress, reducing angiotensin-driven fibrosis of vascular cells by attenuating various reactive oxygen species.

Animal studies have also shown *Leonurus* extracts to reduce left ventricular pressure, increase coronary flow, and prolong the PQ interval, with some research suggesting some that antiarrhythmic effects may occur via antagonism of calcium channels, thereby reducing the speed of repolarization. Isolated lavandulifolioside present in *Leonurus* has been credited with contributing to the negative chronotropism and hypotensive effects of the whole plant extract.

Cardiovascular diseases often involve an alteration of cardiac muscle mitochondria, and agents that support mitochondrial function show promise in preserving heart function and protecting against cardiovascular pathology. *Leonurus* constituents chlorogenic acid, orientin, quercetin, hyperoside, and rutin are all credited with antioxidant activity and are shown to attenuate the production of reactive oxygen species in the mitochondria, a proposed mechanism of cardioprotection. Oxidative stress also induces apoptosis of function cardiomyocytes, and motherwort may protect heart muscle mitochondria in a manner that maintains cell viability.
Evidence-Based Research

*Leonurus cardiaca* has been credited with antioxidant and antiinflammatory activity and an ability to improve heart function and blood circulation,17 partly via mild negative chronotropic effects and hypotensive activity, as has been demonstrated in clinical trials.24 One human pilot study investigated *Leonurus* dosed at 1200 mg/day in patients with hypertension accompanied by anxiety and sleep disorders. A positive effect on mental emotional status and hypertension was reported after 4 weeks, without significant side effects.25 According to the Clinical Global Impression scale, a significant improvement in anxiety and depression parameters was observed in 32% of patients, a moderate improvement in 48% of patients, and a weak effect in 8% of patients. Twelve percent of patients did not respond to therapy.

Safety in Pregnancy and Breastfeeding

*Leonurus* has traditional use as an emmenagogue (a botanical known to promote menstrual flow) and should be avoided by pregnant women in the first trimester, especially in those with a history of miscarriage.

One human randomized controlled trial showed an Asian species of motherwort, *Leonurus heterophyllus*, to prevent postpartum hemorrhage after cesarean section when used in a parenteral form.26

General Safety

*Leonurus* is considered safe and not associated with any known toxicity or side effects.

Dosage

*Leonurus* capsules will usually contain between 200 and 500 mg of dried herb, and this herb is generally considered safe at high doses up to 2 g/day.

Traditional Uses

Folkloric uses of motherwort, emphasized its use as a calming and relaxing herbal agent with tonic effects on hormonal, nervous, and cardiac systems. It was long been classified as a hypotensive nerve,27 capable of both relaxing the blood vessels and calming nervous tension while restoring energy in those with “nervous exhaustion.” For its ability to correct the action of the heart from varied causes, it is often referred to as a cardiotonic.

*Leonurus* has been used to treat heart (e.g., palpitations and tachyarrhythmias) and blood pressure problems, especially when secondary to stress and anxiety.28,29,30 Chinese species of motherwort are also used for coronary artery disease and cerebral ischaemia.31

*Leonurus* is also a traditional childbirth and postpartum botanical that has been used for centuries as a galactogogue and uterine tonic both before and after childbirth.32 Having emmenagogue actions, presumably because both hormonal and vascular effects, it has been used to treat various gynecologic and obstetrical conditions including amenorrhea, fertility, menstrual discomforts, and thyroid disorders. Motherwort is also investigated for inhibitory effects on breast cancer33 and uterine fibroids.34
References


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32 American Materia Medica, Therapeutics, and Pharmacognosy, 11th ed, 1919. Ellingwood F.


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