



## SKULLCAP

(*Scutellaria lateriflora*)

**Family:** Lamiaceae (or Labiatae)

**Synonyms:** Skullcap, Mad-dog weed, Madweed <sup>1</sup>, Helmet flower, Hood-wort <sup>2</sup>, Blue Pimpernel, Quaker Bonnet <sup>3</sup>, Blue skullcap <sup>4</sup>,

Key Clinical Points	
<ul style="list-style-type: none"> <li>❖ Herbalists have used skullcap as a sedative for many years, but no clinical trials have proven its efficacy.</li> <li>❖ Avoid combining skullcap with alcohol or pharmaceutical sedatives.</li> <li>❖ Rare reported cases of hepatotoxicity are likely related to contamination with germander species.</li> </ul>	
Key Constituents and pharmacology	
<p>Constituents: flavones (scutellarin, baicalein, baicalin, wogonin, 5,6,7-trihydroxy-2-methoxyflavone), flavone glycosides, a flavonone-glycoside, tannin, fat, and sugar.<sup>5,6</sup> The flavonoids (flavones, flavone-glycosides, and flavonone-glycoside) have been shown to reduce binding to a serotonin receptor (5-HT<sub>7</sub>) in the brain albeit at concentrations likely to be beyond the usual therapeutic dose, but they may have an effect on sleeplessness, depression, migraine, pain, and memory loss.<sup>6</sup></p> <p>Studies of isolates from the root of <i>Scutellaria baicalensis</i>, a related herb, show binding of wogonin, baicalein, scutellarin, and baicalin to the benzodiazepine site of the GABA<sub>A</sub> receptor.<sup>7,8</sup> <i>Scutellaria lateriflora</i> has an anxiolytic effect in rats<sup>9</sup>. Baicalein has anti-inflammatory, antioxidant, and anxiolytic properties.<sup>10</sup> Several investigators in Asia are researching the pharmacology and pharmacokinetics of constituents of the popular Chinese herb, <i>Scutellaria baicalensis</i>; some of these constituents are present in <i>Scutellaria lateriflora</i>.</p>	
<p><b>Herbal properties:</b> nervine tonic, antispasmodic, sedative/hypnotic, hypotensive.<sup>11,12</sup></p>	
History and traditional use	Indications supported by clinical trials
<p>Known to indigenous Americans and early colonial doctors as a treatment for rabies.<sup>2,13</sup> Subsequently used to treat a variety of nervous complaints, including "female weakness",<sup>13</sup> insomnia, and epilepsy, including grand mal seizures.<sup>5</sup></p> <p>Herbalists combine skullcap with wood betony for nervous headaches, with valerian, passion flower, and/or kava for anxiety, and with adaptogens (e.g., ginseng) for chronic stress.<sup>14</sup> Skullcap was in <i>The United States Pharmacopeia</i> from 1863-1916 and in <i>The National Formulary</i> until 1947.<sup>13</sup></p> <p><b>Preparation and dosage:</b></p> <ul style="list-style-type: none"> <li>• Tea: 1-2 grams (1-2 tsp) dried herb steeped in 1 cup of water for five minutes and taken TID</li> <li>• Tincture (1:5 strength in 40-45% ethanol): 2-4 ml TID.<sup>11</sup></li> <li>• Fluid extract (1:1 in 45% ethanol): 1-2 ml TID.<sup>11</sup></li> </ul>	<p><b>Effectiveness (all indications): uncertain.</b> Clinical trials supporting the use of skullcap are notable for their absence. One small (n=19) randomized, double-blind study looked at energy, cognition, and anxiety in healthy volunteers. The authors reported a trend toward short term sedation and relaxation with less of an effect on cognition.<sup>4</sup> However, no statistical interpretation of the data was presented to define the significance of the findings.</p> <p>Scutellarin, one of the flavone constituents, has shown promise in the treatment of cerebral thrombosis or embolus as well.<sup>3</sup></p>
Interactions with other herbs, pharmaceuticals, disease states	Adverse effects/precautions/side effects/contraindications

**Interactions with drugs:** none known. Given its purported mechanism of action, it is wise to avoid skullcap when taking other CNS depressants, particularly alcohol and benzodiazepine anxiolytics.

**Interactions with other herbs:** may interact with other herbs with sedating properties such as Yan hu suo (*Corydalis* spp), wild lettuce (*Lactuca virosa*), passion flower (*Passiflora incarnata*), kava (*Piper methysticum*), Jamaican dogwood (*Piscidia erythrina*). May interact with other herbs with antispasmodic and relaxant properties, such as wild yam (*Dioscoria* spp), lobelia (*Lobelia inflata*), chamomile (*Matricaria recutita*), passionflower (*Passiflora incarnata*), kava (*Piper methysticum*), lime flowers (*Tilia* spp), valerian (*Valeriana officinalis*), and cramp bark (*Viburnum opulus*). May have additive effects with other nervine tonics such as oat straw (*Avena officinalis*), St. John's wort (*Hypericum perforatum*), damiana (*Turnera aphrodisiaca*), vervain (*Verbena officinalis*), and Indian ginseng (*Withania somniferum*).<sup>12</sup>

**Side effects:** Herbalists report side effects of dizziness, confusion, and irregular heart rhythm at large doses.<sup>14</sup> Other sources report seizures at high doses.<sup>3</sup>

**Adverse events:** Four cases of hepatotoxicity have surfaced, though the causal pathway is unclear. The products in question reportedly contained a combination of skullcap and valerian.<sup>14</sup> The hepatotoxic effects may also have been due to contamination of the skullcap with germander, also known as 'pink skullcap' (*Teucrium canadense*) (other *Teucrium* species are known to cause liver damage).<sup>13</sup> One case of pneumonitis with the related species *Scutellaria baicalensis*, has been reported in the literature.<sup>15</sup>

**Precautions/contraindications:** safety in pregnant and nursing mothers and in children has not been studied. Until it is clear that skullcap has no hepatotoxic properties, health practitioners should be cautious in recommending it for patients with liver disorders.<sup>3</sup>

### Botanical characteristics

Grows up to 3 feet tall, spreads readily. Leaves are toothed ovate to lanceolate, with paired blue flowers just above the leaves on one side of the slender, square branching stem.<sup>2,16</sup> The seed pods look like little lipped bells<sup>1</sup> or "caps".

The plant is native to North America, perennial and hardy to Zone 4. It thrives in fertile soil with plenty of water in partial shade or full sun<sup>16</sup> For peak medicinal activity, the entire herb above ground should be harvested when it begins to flower in the summer and then dried.<sup>16</sup>

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