



CHINESE MEDICINAL PLANTS

**Scutellaria baicalensis Georgi –
Chinese / Baikal skullcap, Huangqin****黄芩**

Huangqin is the dried root (Figure 7) of the perennial herb *Scutellaria baicalensis* Georgi (Figure 6), from the Lamiaceae family. There are more than 300 species in the genus *Scutellaria* throughout the world. In China, there are 102 species and 50 variants. According to the *Chinese Pharmacopoeia 2015 Edition* [1], there are two different kinds of *Scutellaria* medicinal plants, called Huangqin and Banzhilian. *Scutellaria baicalensis* is commonly replaced by the related species *S. rehderiana*, *S. viscidula*, *S. likiangensis*, *S. hypericifolia*, *S. amoena*, and *S. tenax*. The geauthentic crude drug of Huangqin is mainly distributed in Hebei, Shanxi, Inner Mongolia, Jilin, Liaoning and Heilongjiang provinces in China [2]. In addition, it is widely distributed in Russia, Mongolia, North Korea and Japan [3]. *Scutellaria baicalensis* grows in temperate semi-humid and semi-arid areas, prefers warmth, withstands severe cold, drought and waterlogging. Thus, it is suitable for planting in sandy soil with neutral or alkaline, thicker soil layer, fertile, loose soil, and abundant sunshine. The drug part is the dried root [4, 5].

Huangqin tastes bitter and cold. In the Traditional Chinese Medicine (TCM) basic theory system, Huangqin could purge fire for removing toxins, stop bleeding and prevent abortion, clearing heat and dampness. Huangqin displays a significant effect on the treatment of high blood pressure, lung heat cough, fetal restlessness, dampness, and heat. Combined with other drugs, Huangqin is usually applied to clear liver heat and drain lung fire [6].

The main chemical constituents of Huangqin are listed below. Flavonoids: The major constituents of Huangqin are baicalin, baicalein, wogonin; Volatile oil: There are 19 volatile components with more than 1% relative content in the root of *S. baicalensis*. The largest proportion of these is phthalic acid, the second one is β -patchoulene, followed by isoprene, antioxidants HBA, α/β -guaiene and acetophenone; Polysaccharides: Polysaccharides are mainly linked by monosaccharides. Its content is related to the

species, origin, and processing methods of Huangqin; Other chemical components: microelements e.g., diterpenoids, iron, zinc, copper, manganese, lead and cadmium. In addition, it contains amino acids, starch, benzoic acid and *Scutellariae radix* enzyme [7, 8].

Scutellaria baicalensis has a wide range of pharmacological activities, including antibacterial, antiviral, antioxidant, anti-inflammatory, anti-allergy, anti-tumor, neuro- and cardiovascular protection; anti-hyperglycemic, anti-diabetic effect, decreases cholesterol and blood lipids, and improves immunity [2, 9].

India's *S. indica* L. is used to treat hemoptysis and hematemesis. *S. sacdens* Buch-Ham of Nepal is regarded as the traditional medicine for treating wounds and insect bites [10]. Hungary, as a member of the European Pharmacopoeia Committee and European Herbal Products Committee [11], participated in recording Huangqin in *European Pharmacopoeia* [12], which includes the drug-administered parts, processing methods and chemical components of *S. baicalensis*. The content of baicalin (C₂₁H₁₈O₁₁) in *Scutellaria baicalensis* is no less than 9.0% [13]. With the continuous deepening and expansion of international cooperation, the efficacy of TCM has been widely accepted. The sale and application of Huangqin according to the standard can promote the greater role of traditional Chinese medicine in overseas health care.

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