Species (Family)

*Scutellaria lateriflora* L., *S. baicalensis* Georgi and other *Scutellaria* species (Labiatae)

*S. baicalensis* Georgi is a species commonly referred to as scullcap in Chinese herbal medicine.

Synonym(s)

Helmet Flower, Hoodwort, Quaker Bonnet, Scutellaria, *Scutellaria galericulata* L., Skullcap

Part(s) Used

Herb

Pharmacopoeial and Other Monographs

BHP 1996

PDR for Herbal Medicines 2nd edition

Legal Category (Licensed Products)

GSL

Constituents

Limited information has been documented regarding the constituents of *S. lateriflora*, although various related *Scutellaria* species have been investigated.

- **Flavonoids** Apigenin, hispidulin, luteolin, scutellarein, scutellarin (bitter glycoside).
- **Iridoids** Catalpol.
- **Volatile oils** Limonene, terpineol (monoterpenes); d-cadinene, caryophyllene, *trans*-β-farnesene, β-humulene (sesquiterpenes).
- **Other constituents** Lignin, resin and tannin.

Other *Scutellaria* species The related species *S. baicalensis* is reported to contain baicalein, baicalin, chrysin, oroxylin A, skullcapflavone II and wogonin.1–3

*S. galericulata* is stated to contain apigenin, baicalein, baicalin, apigenin-7-glucoside and galeroside (baicalein-β-D-rhamnofuranoside).4

Food Use

Scullcap is not used in foods. In the USA, scullcap is listed by the Food and Drugs Administration (FDA) as a Herb of Undefined Safety.5

Herbal Use

Scullcap is stated to possess anticonvulsant and sedative properties.6–4 Traditionally, it has been used for epilepsy, chorea, hysteria, nervous tension states, and specifically for grand mal epilepsy.7 In Chinese herbal medicine, the roots of *S. baicalensis* Georgi have been used traditionally as a remedy for inflammation, supplicative dermatitis, allergic diseases, hyperlipidaemia and atherosclerosis.

Dosage

- **Dried herb** 1–2 g or by infusion three times daily.7
- **Liquid extract** 2–4 mL (1:1 in 25% alcohol) three times daily.7
- **Tincture** 1–2 mL (1:5 in 45% alcohol) three times daily.7

Pharmacological Actions

In vitro and animal studies

None documented for *Scutellaria lateriflora*.

Many investigations have been undertaken to study the pharmacological actions of *S. baicalensis* root. Documented actions have primarily been attributed to the various flavonoid constituents and include: in vitro inhibition of mast cell histamine release comparable to disodium cromoglycate for some flavonoids;7 in vitro cytotoxicity of scullcap flavone II;5 in vivo and in vitro inhibition of lipid peroxidation;8–10 in vitro inhibition of lipoxygenase and cyclooxygenase pathways;9 hypocholesterolaemic activity in rats.16 This in vivo effect has been linked to in vitro actions documented for various flavonoids, including prevention of ethanol-induced hyperlipidaemia,11 catecholamine-induced lipolysis10 and lipogenesis in adipose tissue;10,11 there is no pronounced effect on blood pressure in cats and rabbits.12 In addition, the latter study found no CNS-depressant and no antispasmodic activity. How-
ever, it did find marked antibacterial activity against various Gram-positive bacteria (e.g. Bacillus subtilis, Escherichia coli, Sarcina lutea and Staphylococcus aureus). (13)

Clinical studies
Clinical investigation of scutellarin involving 634 cases of cerebral thrombosis, cerebral embolism, and paralysis caused by stroke has been undertaken. An overall effective rate of more than 88% was reported following intramuscular, intravenous or oral administration. (14)

Side-effects, Toxicity
Symptoms caused by overdosage of scullcap tincture include giddiness, stupor, confusion and seizures. (G20) Hepatotoxic reactions have been reported after ingestion of scullcap-containing preparations. (15, G20) Adulteration of scullcap herb by Teucrium is recognised. Several cases of hepatitis have been associated with germander (Teucrium chamaedrys). (16)

Contra-indications, Warnings
None documented. In view of the possible hepatotoxicity associated with scullcap, its use is best avoided.

Pregnancy and lactation
Scullcap is stated to have been used traditionally to eliminate a mother’s afterbirth and to promote menstruation. (G22) Limited information is known regarding the pharmacological activity and toxicity of scullcap. In view of this and concerns over hepatotoxicity, scullcap should not be taken during pregnancy and lactation.

Pharmaceutical Comment
Limited information has been documented regarding the chemistry of scullcap. Most of the pharmacological activities reported for other Scutellaria species have been attributed to the flavonoid constituents. Despite the traditional uses of scullcap as a sedative and anticonvulsant, there are no documented scientific data to support these uses. Commercial scullcap is commonly recognised to be adulterated with Teucrium species, notably Teucrium canadense. Herbal preparations stated to contain scullcap may therefore contain a Teucrium species. Few pharmacological studies have been undertaken for Teucrium species. Hepatitis has been associated with germander (Teucrium chamaedrys). Hepatotoxicity has resulted in humans taking commercially available remedies in the UK which are stated to contain scullcap. It would seem advisable to avoid ingestion of scullcap.

References
See also General References G5, G9, G10, G18, G20, G22, G31, G32, G34, G36, G37, G48, G60 and G64.

15 Perharic L et al. Toxicological problems resulting