

**19. GLECHOMA** Linnaeus, Sp. Pl. 2: 578. 1753, nom. cons.

活血丹属 *huo xue dan shu*

Herbs stoloniferous, perennial, gynodioecious or gynomonocious. Stems ascending to prostrate. Leaves long petiolate, base cordate. Verticillasters axillary, 2–6-(to many)flowered. Calyx tubular to campanulate, slightly curved near throat, 15-veined, indistinctly 2-lipped, adaxial lip 3-toothed, abaxial lip 2-toothed. Corolla tubular, dilated at apex, 2-lipped; adaxial lip straight, emarginate or 2-lobed; abaxial lip spreading, 3-lobed. Stamens 4, anterior 2 inserted below lateral lobes of abaxial lip, posterior 2 inserted near throat below adaxial lip; filaments glabrous, undeveloped in pistillate flowers; anther cells oblong, parallel or divergent. Ovary glabrous. Style slender, apex subequally 2-cleft. Nutlets dark brown, oblong-ovoid, smooth or impressed-punctate, glabrous.

About eight species: Asia, Europe, cultivated in North and South America; five species in China.

- 1a. Corolla rarely to 2× as long as calyx.
  - 2a. Calyx 5–7 mm, teeth ovate, ca. 1 mm; leaves glabrous ..... 1. *G. hederacea*
  - 2b. Calyx 9–11 mm, teeth ovate-triangular, 3–5 mm; leaves hairy ..... 2. *G. longituba*
- 1b. Corolla usually more than 2× as long as calyx.
  - 3a. Leaves cordate-ovate, coarsely crenate to serrate-crenate; basal petioles 2–3× as long as blade; corolla tube campanulate to tubular-campanulate.
    - 4a. Plants (except flowers) sparsely retrorse pubescent; calyx teeth ovate-triangular, apex awned ..... 2. *G. longituba*
    - 4b. Plants villous, puberulent; calyx teeth triangular, apex spinescent-aristate ..... 3. *G. biondiana*
  - 3b. Leaves reniform to cordate-reniform, crenate; basal petioles more than 3× as long as blade; corolla tube funnellform.
    - 5a. Calyx ca. 7–10 mm, teeth ovate; leaf blade ca. 2×3 cm ..... 4. *G. grandis*
    - 5b. Calyx 10–12 mm, teeth triangular-lanceolate, spinescent-aristate; leaf blade ca. 3×4–4.5 cm ..... 5. *G. sinograndis*

**1. *Glechoma hederacea*** Linnaeus, Sp. Pl. 2: 578. 1753.

欧活血丹 *ou huo xue dan*

*Nepeta glechoma* Benth.

Stems 10–17 cm, ascending, base purplish, subglabrous, nodes retrorse strigose. Petiole of basal leaves 3.5–4 cm, 0.8–1.8 cm in upper leaves, with sparse, retrorse, minutely hooked hairs; upper blade larger than basal one, reniform to reniform-orbicular, 0.8–1.3× ca. 2 cm, glabrous except sometimes sparsely retrorse strigose on abaxial veins, margin ± coarsely crenate, apex rounded. Cymes 2–4-flowered, in verticillasters; bracts and bracteoles subulate, ca. 1 mm. Calyx tubular, slightly curved at apex, 5–7 mm, hirtellous; teeth ovate, ca. 1 mm, apex acute, ciliate. Corolla purple, ca. 1 cm, hirtellous; tube ca. 7.5 mm, straight, funnellform; upper lip straight, ca. 3 mm, 2-lobed, lobes oblong; lower lip obliquely spreading, ca. 4 mm, middle lobe flabellate, apex emarginate; lateral lobes ovate. Nutlets unknown. Fl. May.

Valley grasslands. Xinjiang (Gongliu Xian) [Russia; Europe].

Used medicinally for pneumonia and nephritis.

**2. *Glechoma longituba*** (Nakai) Kuprianova, Bot. Zhurn. (Moscow & Leningrad) 33: 236. 1948.

活血丹 *huo xue dan*

*Glechoma hederacea* Linnaeus var. *longituba* Nakai, Bot. Mag. (Tokyo) 35: 173. 1921; *G. brevityuba* Kuprianova; *Nepeta glechoma* Benth. var. *hirsuta* Debeaux; *N. glechoma* var. *sinensis* Miquel.

Stems 10–20(–30) cm, ascending, base purplish red, young parts sparsely villous. Petiole 1–2× as long as blade; leaf blade of basal leaves smaller, cordate to subreniform, upper blade cordate, 1.8–2.6×2–3 cm, adaxially sparsely strigose or puberulent, abaxially purplish, veins pilose or hirsute, margin coarsely crenate or serrate-crenate, apex acute to obtuse. Verticillasters 2(–6)-flowered; bracts and bracteoles linear, to 4 mm, ciliate. Calyx tubular, 0.9–1.1 cm, villous

especially on veins; teeth ovate-triangular, 3–5 mm, apex awned, ciliate, adaxial ones longer. Corolla blue to purple with dark spots on lower lip, tubular-campanulate, long-tubed corolla 1.7–2.2 cm, short-tubed corolla 1–1.4 cm, ± villous, puberulent; upper lip straight, 2-lobed, lobes subreniform; lower lip elongated, obliquely spreading, middle lobe reniform, 2–3× as long as upper lip, apex emarginate; lateral lobes oblong, ca. 1/2 as long as middle lobe. Nutlets ca. 1.5×1 mm, basally ± triquetrous, apex rounded. Fl. Apr-May, fr. May-Jun.

Grasslands, forest margins, forests, streamsides; 100–2000 m. All provinces except Gansu, Qinghai, Xinjiang, Xizang [Korea, Russia].

Used medicinally.

**3. *Glechoma biondiana*** (Diels) C. Y. Wu & C. Chen, Acta Phytotax. Sin. 12: 31. 1974.

白透骨消 *bai tou gu xiao*

Stolons ascending, rooting at nodes. Stems 15–30 cm or more, young parts sparsely villous to puberulent, glabrescent, base sometimes purplish. Petiole of basal leaves ca. 3× as long as blade, mid cauline petioles 1.2–2.5 cm; leaf blade of basal leaves smaller, mid cauline blade cordate, 2–4.2×1.9–3.8 cm, villous, abaxially purplish, margin coarsely crenate, apex needlelike-acute. Verticillasters 6–9-flowered; bracts and bracteoles linear, ca. 4 mm, ciliate. Calyx tubular to campanulate, slightly curved, 1–1.2 cm, villous, puberulent; teeth narrowly triangular, 4–5 mm, apex spinescent-aristate, ciliate. Corolla reddish to purplish, tubular-campanulate, 2–2.4 cm, sparsely villous; tube gradually dilated ascending, to 6 mm wide at throat; upper lip straight, broadly ovate, apex emarginate; lower lip obliquely spreading, middle lobe flabellate, apex emarginate; lateral lobes ovate. Nutlets basally slightly triquetrous, with impressed dots. Fl. Apr-May, fr. May-Jun.

• Wet fertile forest margins, streamsides; 1000–2200 m. Gansu, Hebei, Henan, Hubei, Shaanxi, Sichuan.

- 1a. Plants glabrous or puberulent on young parts, ca. 30 cm tall; calyx campanulate 1.2–1.5 cm, subglabrous except for pilose teeth ..... 3b. var. *glabrescens*
- 1b. Plants villous or sparsely villous; calyx tubular-campanulate or tubular, villous, puberulent.
- 2a. Plants 15–30 cm tall, villous; verticillasters 6-flowered; calyx tubular-campanulate ..... 3a. var. *biondiana*
- 2b. Plants more than 30 cm tall, sparsely villous; verticillasters (6–)9-flowered; calyx tubular ..... 3c. var. *angustituba*

### 3a. *Glechoma biondiana* var. *biondiana*

白透骨消 bai tou gu xiao

*Dracocephalum biondianum* Diels; *Meehaniaopsis biondiana* (Diels) Kudô.

Plants 15–30 cm tall, villous. Verticillasters 6-flowered. Calyx tubular-campanulate.

- Wet fertile forest margins, streamsides; 1000–1700 m. Shaanxi.

### 3b. *Glechoma biondiana* var. *glabrescens* C. Y. Wu & C. Chen, Acta Phytotax. Sin. 12: 31. 1974.

无毛变种 wu mao bian zhong

Plants ca. 30 cm tall, glabrous or puberulent on young parts, long stoloniferous. Calyx campanulate, 1.2–1.5 cm, subglabrous except pilose on teeth.

- Wet fertile valley forests, streamsides; 1200–2200 m. Gansu, Hebei, Henan, Hubei, Shaanxi.

### 3c. *Glechoma biondiana* var. *angustituba* C. Y. Wu & C. Chen, Acta Phytotax. Sin. 12: 31. 1974.

狭萼变种 xia e bian zhong

Plants more than 30 cm tall, sparsely villous. Verticillasters (6–)9-flowered. Calyx tubular.

- Dense forests. Hubei, Sichuan.

### 4. *Glechoma grandis* (A. Gray) Kuprianova, Bot. Zhurn. (Moscow & Leningrad) 33: 237. 1948.

日本活血丹 ri ben huo xue dan

*Nepeta glechoma* Benthham var. *grandis* A. Gray, Mem. Amer. Acad. Arts 6: 402. 1858; *Glechoma hederacea* Linnaeus var. *grandis* (A. Gray) Kudô.

Stems tufted, ca. 20 cm tall, erect becoming prostrate, base purple, pubescent. Petioles of basal leaves 3–4.5 cm, hirsute, upper petioles 2–3.5 cm, pilose; leaf blade reniform, 1.5–2×2–3 cm, herbaceous, adaxially strigose, abaxially pilose on veins, margin crenate, apex rounded. Verticillasters 2(–4)-flowered; bracts and bracteoles linear-subulate, ca. 2 mm, ciliate. Calyx tubular, slightly dilated at apex, 7–10 mm, villous; teeth ovate, 1.5–2 mm, apex needlelike, ciliate. Corolla purplish, straight, funnelform, 1.5–2 cm, villous outside, pilose on throat inside; adaxial lip straight, lobes subcircular, lower lip erect, middle lobe wide, flabellate, apex emarginate; lateral lobes ovate, as long as upper lip. Nutlets base slightly triquetrous, apex rounded. Fl. Apr–May, fr. Jun.

- Wet areas, near houses. Jiangsu, Taiwan [Japan].

### 5. *Glechoma sinograndis* C. Y. Wu, Acta Phytotax. Sin. 8: 7. 1959.

大花活血丹 da hua huo xue dan

Stolons ascending. Stems to 25 cm, sparsely floccose-villous. Petiole of upper leaves 1.5–2×as long as blade, densely villous; leaf blade of basal leaves reniform, villous; upper blade cordate-reniform, 1–3.5×1.5–5 cm, adaxially hirtellous, abaxially purplish, sparsely puberulent, red glandular, veins spreading hirtellous, margin remotely mucronate-crenate, apex obtuse. Verticillasters inserted in middle axils, 2(–4)-flowered; peduncle less than 5 mm, villous; bracts and bracteoles linear-subulate, ciliate. Pedicel ca. 3 mm, villous. Calyx tubular 1–1.2 cm, finely glandular, veins sparsely villous; teeth triangular-lanceolate, 3.5–4 mm, apex spinescent, ciliate. Corolla reddish or bluish, straight, funnelform, 2.5–2.7 cm, ± pilose; upper lip straight; middle lobe of lower lip subcircular, margin undulate, apex emarginate; lateral lobes ovate, as long as upper lip. Nutlets ca. 2×1 mm, base slightly triquetrous, apex subrounded, smooth, slightly shiny. Fl. Apr–May, fr. Jun.

- Wet mixed forests near streams; 2000–3000 m. Yunnan.

Used medicinally for infantile bronchitis.

