Radix Bupleuri – *Chaihu*


**Official drugs:** In Chinese Pharmacopoeia: the roots of *Bupleurum chinense* DC. (= *B. falcatum* auct. Sin. non L.) and *Bupleurum scorzonerifolium* Willd. (= *B. falcatum* var. *scorzonerifolium* (Willd.) Ledeb.). - Apiaceae - The drugs differ both in their morphology and in their origin. *Beichaihu* (*B. chinense*) originates from northern China (north of the Yellow River), while *Nanchaihu* (*B. scorzonerifolium*) is indigenous to the southern provinces(1). The Japanese Pharmacopoeia requires *Bupleurum falcatum* L. (= *B. scorzonerifolium* Willd. var. *stenophyllum* Nakai) or varieties of this species(3, 4).

**Adulterations:** *B. longiradiatum* Turcz. (toxic!)(1), occasionally contaminations with roots of *Aconitum* spec.(3).

**Description of the drugs:**(1)

*B. chinense:* frequently branched roots, 6-15 cm long, 3-8 cm in diameter, externally blackish-brown or light brown, texture hard and tenacious, not easy to break

*B. scorzonerifolium:* relatively thin roots, non or slightly branched, externally reddish-brown or black-brown, texture slightly soft

**Pretreatment of the raw drug:**

Stalk-remnants are removed, the drug is washed and moistened, cut into thick slices and dried (Chaihu). The sliced drug is then soaked in vinegar and dried under mild heat (Cuchaihu).

**Medicinal use:** Often in combination with other drugs as antihepatotoxic, antipyretic, analgesic, sedative, and antidepressive agents, in cases of menstrual complaints, uterine and anal prolaps, sudden loss of hearing and malaria(1, 4, 5).
Main constituents (see Fig. 1):

- **triterpene saponins of the oleanan-type:**
  saikosaponin a, c, d, in addition, also saikosaponins b1 – b4, e and f (7). Saikosaponin b1 – b4 are artefacts of saponins a and d, which arise during extraction of the plant juices in acid medium by splitting off the 13ß, 28-epoxy group (3, 8), monoacetylsaikosaponins and acidic saponins, which are derived from oleanolic acid (7).

- **sapogenins:** the saikogenins E, F and G are recognized as being genuine, while the saikogenins A, B, C and D are regarded as artefacts of the latter (4, 9).

- **polycytenes:** saikodiyne A, B, C (10) and further C15-compounds (11). *)

- neutral phytosterols such as α-spinasterol and stigmasterol.

- fatty acids such as palmitic, oleic, linoleic and stearic acid (5, 7), polyhydroxysterols.

- the lignan saikochromon A (9), amino acids, sugar, e.g. the sugar alcohol adonitol (12), and the furanocoumarin angelicin (isolated from *B. falcatum*) (13).

*) Probably of phytofungi origin

Pharmacology:

*In vitro* effects:

- hemolytic (3, 8)
- local anesthetic (decoction) (3)
- antiviral (polysaccharides) (14)
- effects on liver enzymes: Inhibition of glucose-6-phosphatase and NADPH-cytochrome-C-reductase, stimulation of 5′-nucleotidase (3, 15).

*In vivo* effects (3, 4, 15)

- antihepatotoxic (rats, humans)
- antipyretic (rabbits, mice, rats)
- analgesic (saponins and saikogenin A) (mice)
- anti-inflammatory (rat-paw edema model)
- antigranulomatotic in rats
- sedative (saponins and saikogenin A) (mice)
- cholagogue and choleretic (whole-plant extract) (dog)
- anticholesterolemic (saikosaponin a, d and genin A, D (rats and rabbits)
- anti-ulcerogenic (rats)
- antihypertensive

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Effects and indications according to Traditional Chinese Medicine (1, 2, 4, 6)

<table>
<thead>
<tr>
<th>Taste:</th>
<th>bitter, slightly acid</th>
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<tbody>
<tr>
<td>Temperature:</td>
<td>cool</td>
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<tr>
<td>Channels entered:</td>
<td>liver, gall bladder</td>
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<td>Effects:</td>
<td>resolves Yang Heat patterns, relaxes constrained Liver Qi, raises the Yang Qi, diaphoretic, gastrointestinal-regulative, liver function-restorative, spleen-invigorating</td>
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<td>Symptoms and indications:</td>
<td>fever in common cold, alternating chills and fever, epigastric, chest and flank pain, nausea, vomiting, vertigo, indigestion, menstrual disorders, hemorrhoids, prolapse of the uterus and rectum, diarrhea due to collapse of Spleen Qi</td>
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