

# Oldenlandia and Scutellaria

## Antitoxin and Anticancer Herbs

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Oldenlandia and scutellaria are extensively used in modern Chinese practice for treatment of viral infections (especially hepatitis) and cancers, as well as for some other syndromes involving "toxic heat," such as acne, boils, and other skin ailments. In addition to being incorporated into decoctions prescribed at medical clinics, these herbs are available as instant tea preparations from China, intended for daily use as a preventive measure against these diseases. Despite their widespread consumption, these herbs are not among those mentioned in traditional formulas studied as part of the standard Chinese herb training, making it more difficult to understand their use and apply them to their fullest potential. They had been utilized in some folk remedies in the past, but came to prominence only during the 20<sup>th</sup> Century.

### OLDENLANDIA

Oldenlandia has one of the longest of Chinese herb names, outdoing even cordyceps (*dongchongxiacao*) when it comes to today's commonly used herbs. It is called *baihuasheshecao* (sometimes written *Bai Hua She She Cao*). This term has a relatively simple meaning, referring to an early use of this herb as a treatment for snake bites. *Baihuashe* is the name of the agkistrodon snake (*baihua* means white flower and refers to the pattern on the snake's skin; *she* means snake), a type of pit viper that is also used as a medicine. Because of the herb's reputation for treating poisonous snake bites and the appearance of the leaves, it is called *shecao*, literally tongue weed; referring to the long thin leaves of the herb (*cao* is used to describe any weedy plant) that are like a snake's tongue.



Oldenlandia



*Trimeresurus albolaris*

Thus, the herb is known as the weed used for treating bites of agkistrodon, though it is today considered more specific for the venomous bite of another viper, *Trimeresurus albolaris*, native to southern China (pictured here). The whole plant is collected for medicinal use, and its raw material is characterized by stems with small dried leaves (there is only small fibrous root material, if any). An alternative genus name for *Oldenlandia* is *Hedyotis*; some botanists have been shifting to *Hedyotis* as the preferred genus name. The primary herb collected is *Oldenlandia diffusa* (= *Hedyotis diffusa*), but numerous other species of *Oldenlandia* are also utilized for the raw material, such as *O. corymbosa*.

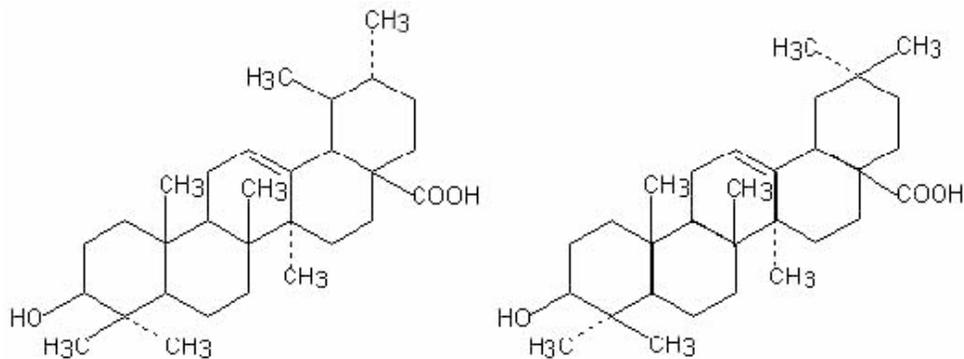
Oldenlandia is from the Rubiaceae family, and is collected from the wild. It is found mainly in the southeastern provinces of China-Guangxi, Guangdong and Fujian-growing at low altitude in moist fields. It is collected in summer and autumn, dried in sunlight or used fresh.

The herb was not mentioned in the classic herbals, but has been a popular folk medicine that was later reported in books and medical records after the Chinese revolution (1-3). Oldenlandia was first described formally in the 1949 **Herbal Records of Guanxi**. The text says that "the herb is used to cure childhood malnutrition, snakebite, and tumor, and, when used externally, it is effective for vesicles and ichthyosis." It had been mentioned briefly in the modern book **Folk Medicine Herbs of Southern Fujian** that "the herb is bitter, neutral, non-toxic, and used to clear heat, remove toxin, and alleviate pain." The book **Materia Medica of Quanzhou** (Quanzhou is a port city of Fujian Province) summarizes: "Oldenlandia clears heat, removes toxin, dispels fire, and vitalizes blood; it is used to treat carbuncle, cellulitis, scrofula, and other external diseases, as well as pneumonia and pulmonary infections." Its range of folk uses and clinical applications in modern Chinese medicine are extensive and include treatment of carbuncles, skin sores and ulcerations, swollen and painful throat, bronchitis, gynecologic infections and pelvic inflammatory disease, hepatitis, and cancer; topically, it is applied as a blood vitalizing herb to treat injuries, and, of course, for treatment of snake bite.



The herb first came to prominent attention for its value in resolving acute appendicitis at a time when China had limited medical facilities and drugs to work with (1). In the early 1970s, it was reported that more than a 1,000 cases of appendicitis and peritonitis had been documented as effectively treated with decoction of oldenlandia (60 grams per day, divided into 2-3 doses, usually with a few other herbs). Around the same time, its potential for anticancer applications was investigated. The laboratory basis for pursuing possible drug development of the herb-summarized from the medical research literature-was as follows:

At high concentration, the crude preparation of the herb had inhibitory action against Ehrlich ascites carcinoma, Jitian sarcoma, and multiple kinds of leukemic cells *in vitro*. However, *in vivo* experiments showed that this herb had no significant therapeutic effects against some transplanted tumors...However, another report claimed that oldenlandia suppressed bacteriophage and inhibited ascetic liver carcinoma cells *in vitro*. Daily administration of the agent at the dose of 1 mg/animal for 9 days resulted in 57.4% growth inhibition of the transplanted sarcoma in mice; signification inhibition of the nuclear division of the carcinoma cells, especially that of the mitotic cells; and in more prominent cancerous degeneration and necrosis, relative to the controls.



Ursolic acid (left), and oleanolic acid (right).

The inconsistent laboratory results have been a barrier to more extensive use of oldenlandia for cancer in modern medicine. Nonetheless, oldenlandia was being utilized clinically by traditional medicine doctors. In 1975, it was claimed that beneficial effects could be achieved in those cases of cancer resistant to other therapies and that the herb could be used synergistically with or alternating with other anticancer drugs.

The book **An Illustrated Guide to Antineoplastic Chinese Herbal Medicine** (4) lists properties and indications of oldenlandia as follows:

**Properties:** sweet, bland, slightly bitter, and slightly cold. Clears heat and toxin, activates blood circulation, removes blood stasis, promotes diuresis, and relieves stranguria (urinary obstruction).

**Indications:** various kinds of tumor, especially tumors of the digestive tract, lymphosarcoma, carcinoma of the liver and larynx. Also for appendicitis, hepatitis, pneumonia, cholecystitis, urinary infection, furunculosis, cellulites, and snake bite.

Dr. Jiao Shude, in his **Ten Lectures on the use of Medicinals** (5), says that he "frequently adds about 30-40 grams of this medicinal to an appropriate decoction medicine devised according to the principle of pattern identification" for treating various forms of cancer. He also suggests adding some other anticancer herbs, such as scutellaria. In **Pharmacology and Applications of Chinese Materia Medica** (1), it is noted for oldenlandia that: "The herb at the dose of 30-60 grams is often added to conventional prescriptions for carcinoma." In **Chinese Medicinal Herbs of Hong Kong** (6), among the indications for oldenlandia is "early stage of cancer of lungs, liver, and rectum." It is recommended there that oldenlandia be used in a dosage of 60 grams along with 30 grams of scutellaria as a decoction, taken once a day.

There were some claimed benefits to use of these herbs for cancer, including both short-term symptom relief and a significant number of tumor remissions, but it is difficult to know if a cure was ever attained (and, if so, whether that was due to an accompanying modern drug therapy). Still, oldenlandia remains subject of considerable investigation.

The active components of oldenlandia that inhibit cancers, viruses, and bacteria are not clearly established. The herb has significant amounts of oleanolic acid and its isomer ursolic acid, both pentacyclic triterpenes that have been shown to have anti-inflammatory and anticancer potential. These compounds are found in several other Chinese herbs, including some that are classified along with oldenlandia as "clearing heat and removing toxins" (e.g., forsythia) and herbs that have been shown to promote immune functions (e.g., ligustrum). Forsythia and ligustrum are in the Oleanaceae plant family, from which the term oleanolic acid is derived.

Recent laboratory studies of the action of oldenlandia (7-11). suggest that the herb may contribute to inhibiting growth of cancer cells, promoting cancer cell death (apoptosis), and enhancing immune attack against cancer cells. It remains unknown whether these effects actually occur in people who consume the herb.

As a preventive health care agent, oldenlandia is understood to inhibit mutation of cells by carcinogens. As an immune regulating herb, oldenlandia remains of interest for use along with modern cancer therapies.

## SCUTELLARIA

Scutellaria refers to *banzhilian*, the whole plant of *Scutellaria barbata*, and should not be confused with "scute," the common name referring to *huangqin*, the root of *Scutellaria baicalensis*. These are in the mint family (Labiatae). Though both of the same genus, the former, for which the tops are used, has essential oils among the active components, while the latter relies primarily on flavonoids, particularly baicalin and baicalein.



Scutellaria

The Chinese name for the herb refers to "half twigs" (*banzhi*): the stems of the plant are half covered with leaves and half a flower stalk, hence the name. The term *lian* is used to describe the lotus, which is most likely mentioned here just to indicate that the plant is valued, not for any other relation. Scutellaria had been used as a folk medicine and is not mentioned in any classic herbals. It was first described formally in a modern science journal (Jiangsu Botanicals Journal). It was reported in the *National Collection of Medicinal Herbs* that: "the herb is slightly bitter and cool, used to clear heat, remove toxin, and vitalize blood to remove blood stasis, and it has anticancer actions; it is used for tumor, appendicitis, hepatitis, ascites due to cirrhosis, and pulmonary abscess."

The plant is a small-leaved mint, producing bright purple flowers. Like oldenlandia, it grows in moist flatlands, particularly at the edges of rice paddies and ditches, in southeastern China, though it is also found occasionally further West, to Sichuan, and further north, to Shaanxi, and at altitudes up to 2,000 feet (~650 meters). The tops are collected in late spring or early June, and carefully dried.

Scutellaria is much less studied than oldenlandia, so there is only limited information available about it. However, it is considered of potential value and has been shown in laboratory studies to provide some of the same mechanisms of anticancer action as oldenlandia mentioned above (11-14). Its main significance here is the common practice of combining it with oldenlandia, especially for treatment of cancer, though it is sometimes used alone or with herbs other than oldenlandia.

## ANTI-CANCER FORMULATIONS

In the book **Anticancer Medicinal Herbs**, some therapies are mentioned with oldenlandia and scutellaria as main ingredients for cancers of the specified areas as indicated below. The listing by cancer site should not be interpreted as meaning that the formulation is highly specific for the cancer type, only that this is what the formula had been applied for at the hospital where it was being used:

- Stomach: combine oldenlandia (90 g) and imperata (60 g) or use scutellaria (30) and imperata (30)
- Esophagus, rectum, and stomach: oldenlandia (70 g) and coix (30 g); plus other herbs in small quantities
- Esophagus: oldenlandia (60 g), scutellaria (60 g), cycas leaf (60 g), imperata (60 g), cotton root (60 g)
- Rectum: oldenlandia (60 g), scutellaria (15 g), solanum (60 g), lonicera stem (60 g), viola (15 g)
- Ovary: oldenlandia (30 g), scutellaria (50 g), solanum (50 g S. nigri; 30 g S. lyrati), turtle shell (30 g)
- Pleura (metastasize to): scutellaria (120 g), taraxacum (30 g)
- Liver, rectum, lung: oldenlandia (60 g) and scutellaria (60 g)
- Liver: oldenlandia (60 g), scutellaria (60 g), cycis (18 g), phragmites (30 g)

In the book, **Color Atlas of Anticancer Animal, Plant, and Mineral Preparations and their Applications** (14) a small formula for digestive tract cancers and lymphosarcoma is mentioned:

oldenlandia (50 g), imperata (50 g), coix (20 g), and brown sugar (60 grams)

The herbs are cooked for two hours, the liquid is strained off and the residue is cooked again for one hour and then the liquids are combined and taken in three divided doses. The claimed results of giving this tea in 81 patients with gastric cancer were: complete remission in 15 cases, partial remission in 7 cases, and minimal remission in 39 cases. We do not know if the "complete remission" cases had later reappearance of the cancers. This same formula is mentioned in several books about treating cancer with Chinese herbs.

#### **APPENDIX: Oldenlandia-Scutellaria Formulas in the ITM Formulary**

At ITM, an anticancer granule formula has been devised for use in cases where standard medical therapies have proven ineffective or unusable, or where there is reason to believe that additional therapies would be of benefit (e.g., the effectiveness of standard therapy is known to be quite limited). The formula, based on the above prescriptions and similar work published in other books on the subject is equal parts:

##### Oldenlandia Formula

<i>ihuasheshecao</i>	denlandia
<i>inzhilian</i>	utellaria
<i>imaogen</i>	perata
<i>ngkui</i>	lanum
<i>yiren</i>	ix

In order to get dosages somewhat like those of the decoctions used in China, the dosage of granules should be at least 18 grams per day (e.g., 6 grams each time, 3 times per day). These granules are typically rated as being a 5:1 extract, so 18 grams per day corresponds to the decoction from 90 grams of crude dried herbs.

There is also a collection of crude herbs that are to be cooked by the patient, described elsewhere as Astragalus-Oldenlandia Tea, which includes:

##### Astragalus-Oldenlandia Tea

<i>uangqi</i>	tragalus
<i>huang</i>	hmannia
<i>ejia</i>	rtle shell
<i>inshen</i>	lvia

<i>veteng</i>	illettia
<i>ihuasheshecao</i>	denlandia
<i>anzhilian</i>	utellaria
<i>zeng</i>	atycodon
<i>zhiren</i>	pinia
<i>aren</i>	rdamom
<i>enqu</i>	ien-chu
<i>incao</i>	corice

The last four herbs are utilized to promote digestion; some of the herbs (e.g., rehmanna, millettia, astragalus) are used to support the immune system function and promote blood circulation, properties attributed also to oldenlandia. One packet is used as a one or two day supply of tea. It is recommended to be used for three weeks at the beginning of cancer therapies for optimum effects; it may then be continued or replaced by tableted formulas that are more convenient for the patient to use.

And there is the tablet formula, Paris 7, which consists of:

<i>coixiu</i>	aris	20'
<i>xingcao</i>	outtuynia	15'
<i>anzhilian</i>	cutellaria	15'
<i>ihuasheshecao</i>	ldenlandia	15'
<i>qingye</i>	atis leaf	15'
<i>andougen</i>	ibprostrata	10'
<i>gongying</i>	araxacum	10'

Paris 7 is made by the decoction method, followed by drying and forming into tablets. Typical dosing is 5-6 tablets each time, three times per day. The 750 mg tablets provide about 11.3-13.5 grams of extract, which is rated as about 8:1 concentration, hence the suggested dosage represents about 90-108 grams of crude dried herbs. This tablet formulation, and others like it mentioned briefly below, are described in the book **A Bag of Pearls** (15).

Oldenlandia with coix is included in the formula Coix Tablets, which is indicated for acne, herpes zoster, and intestinal infections. It is sometimes used along with "anticancer" formulas for treatment of skin cancers. Oldenlandia is also included in Isatis 6, indicated for viral infections and skin eruptions; it is sometimes combined with mass-resolving formulas as part of the therapy for abdominal tumors. In addition, oldenlandia is an ingredient in the formula Bupleurum-Gardenia Tablets, which is mainly indicated for viral hepatitis, though also of potential use for bacterial infections such as vaginal infection, skin eruptions, and otitis media.

Instant beverage teas are also available for use in preventive health care. The one shown on the next page is comprised of oldenlandia and scutellaria extracts dispersed on sugar granules and packed in individual serving bags for easy use. The taste is pleasant, but the product is not strong enough to be used as a central part of an herbal treatment protocol.

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