

# I. Oral Intake Herbal Preparations

In history, Chinese have made 5 major inventions to the world civilization. 1) Chinese herbal medicine for effective treatment of variety of chronic diseases and tumors, 2) Gun powders for the development of rockets and space science, 3) Navigator for sailing on ships and airplanes, 4) Manufacture of papers, and 5) Printing technology.

Herbal cancer therapy comprises a number of alternative treatments in the fight against cancer. As early as more than 3,000 years ago, Chinese doctors had used herbs in treatment of cancer patients. Chinese medicine has been used widely in Japan, Korea, India, and South East Asia countries since long time ago.

According to the reliability of therapeutic effects, Chinese medicinal herbs divide into 3 main categories. The first is the Classical Medicinal Herbs, including approximate 265 kinds of medicinal herbs and plants and a few of medicinal minerals that have been identified by scientific works and proven by clinic studies. The second is the folk herbs (folk experienced recipe herbs) that have approximately 600 sorts of herbs. The third is the hi-tech made herbal medicines, the concentrated herbal extract, which is 5 to 10-fold more effective than their raw materials.

From the modality of administration of herbal medication, anti-cancer herbal medicines are herein classified into 3 groups, including take by mouth, topical use and injectable preparations (not available at our HCC and HMC).

Since 1990, a research group of hi-tech herbal medicine directed by Dr. David Liu has conducted many studies on herbal treatments in chronic diseases and tumors. We have screened all of 66 sorts of anti-cancer medicinal herbs using our unique techniques, including identify and analysis of ester-soluble active ingredients, ethanol-soluble active ingredients and hydrate-soluble active ingredients in each potential anti-cancer medicinal herb or plant.

We have demonstrated that LDL-110 anti-cancer herbal active ingredient is 6-fold powerful than chemotherapy drug mitomycin in killing 14 types of human cancer cell lines in tissue culture, including 3 types of breast cancer and cancer of prostate, 4 types of lymphoma, 2 types of leukemia and melanoma, and 2 types of colorectal carcinoma. Furthermore, clinic studies have shown LPY-80 herbal capsule is a high potent broad-spectrum anti-leukemia and lymphoma herbal remedy. More importantly, both LDL-110 anti-cancer herbal capsules and LPY-80 anti-leukemia-lymphoma herbal capsules are convenient and safe to patients, they are available in capsules which are taken by mouth and are free of side-effects if clients follow the service directions.

The below descriptions are commonly used Chinese anti-cancer herbs that have been investigated, identified, tested, and clinically proven in over hundred thousand patients every year in China. These herbs are allowed to be used as herbal supplements in the USA.

One should understand that a single herb or a single herbal extract may only give little anti-cancer therapeutic effect when it is used alone. However, when several

herbs or herbal extracts scientifically formulated together will result in highly effective anti-cancer recipe and the side-effects of the formulated herbs would be attenuated, minimized or neutralized. For example, when Glossy Privet fruit is used alone, it may give about 20 to 30% anti-cancer efficacy in some patients with leukemia or lymphoma and it may cause some adverse effects as well. However, our experience indicated that Glossy Privet fruit combines with Milkvetch root herb and others that may attain 90% anti-cancer efficacy and brings about 10% side-effects. Therefore, a correct herbal therapy regimen is not a simple accumulation picking several kinds of anti-cancer herbs together. Self-prescription of herbs by clients is not advised that may be harmful or even fatal.

For cancer patient, this chapter is a good self-education booklet and reference from which patients will understand what anti-cancer herbal treatment is.

For cancer patient, you need always consulting your primary care physician or herbal specialist before you use any anti-cancer herb or herbal product. Particular attention should be paid to whom the below herbs are not for use in children under 18 of age. Safety during pregnancy and in lactating mothers has not yet been established. The HCC and HMC will not take any legal responsibility to one who has used raw herbal materials or herbal remedies from the outside resources of our facilities.

The FDA Regulations: Although these anti-cancer herbs, herbal supplements or herbal remedies are clinically proven high potent for patients with malignant tumor, cancer, leukemia and lymphoma in China and other countries, according to the USA-FDA regulations of herbal supplements, each of the below described herbs or herbal remedies is labeled as "This statement has not been evaluated by the FDA. This product is not intended to diagnosis, treat, cure or prevent disease".

## Aloes (Lu Hui)



Aloes are succulent plants belonging to the Lily family, with perennial, strong and fibrous roots and numerous, persistent, fleshy leaves, proceeding from the upper part of the root, narrow, tapering, thick and fleshy, usually beset at the edges with spinney teeth. Many of the species are woody and branching. In the remote districts of S.W. Africa and in Natal, Aloes have been discovered 30 to 60 feet in height, with stems as much as 10 feet in circumference.

The flowers are produced in erect, terminal spikes. There is no calyx; the corolla is tubular, divided into six narrow segments at the mouth and of a red, yellow or purplish color. The capsules contain numerous angular seeds.

**Medicinal Uses:** The drug Aloes is one of the safest and best warm and stimulating purgatives to persons of sedentary habits and phlegmatic constitutions. An ordinary small dose takes from 15 to 18 hours to produce an effect. Its action is exerted mainly on the large intestine. It is also used in the treatment of vermifuge. It induces mild bowel movement that is indicated for constipation patient.

Aloes was employed by the ancients and was known to the Greeks as a production of the island of Socotra as early as the fourth century B.C. The drug was used by Dioscorides, Celsus and Pliny, as well as by the later Greek and Arabian physicians, though it is not mentioned either by Hippocrates or Theophrastus.

**Dr. David Liu's Comment:** Active ingredients in Aloes work milder than Medicinal Rhubarb Root. It has a mild inhibition effect on tumor cells when aloe extract is used at a high dose in tissue culture. Synergic therapeutic effect of aloes is believed that it

can help with bowel movement and clean up digestive system, which contributes in some degree to anti-cancer herbs.

## Asparagus Root (Tian Dong)



Asparagus root contains more than hundred sorts of ingredients. Steroid saponins: Asp-IV, Asp-V, Asp-VI, and Asp-VII; Methylprotodioscin; Pseudoprotodioscin; Decameric saccharides; Fructose; Sucrose; 5-methoxymethyl furfural; Asparagine; Serine; Glycine; Alanine; Valine; Methionine; Leucine; Isoleucine; Phenylalanine; Tyrosine; Aspartic acid; Glutamic acid; Arginine; Lysine; Asparagus polysaccharide A, B, C and D.

**Anti-bacterial Effect:** In vitro antiseptic experiments show that Asparagus root has an inhibitory effect on anthrax bacillus 206, hemolytic streptococcus A and B, Bacillus diphtheria, diphtheria bacillus, Streptococcus pneumonia, Staphylococcus aureus, Staphylococcus citrus, Staphylococcus album, and hay bacillus.

**Anti-Allergy:** The recipe using Asparagus root and Coastal Glehnia root and lightyellow sophora root as main ingredients together with other herbs has reliable immunosuppressive effect in the treatment of autoimmune diseases (scleroderma, lupus and nephritis) and whole body allergic itching.

**Anti-Cancer Effect:** Ethanol-soluble Asparagus root extract inhibits tumor growth (leukemia, lymphoma and S180 tumor) in mice. Currently, it is believed that the main anti-cancer active ingredients of Asparagus root are asparagus polysaccharides that may be used in the treatment of liver cancer.

**Dr. David Liu's Comment:** Asparagus root herb or its extract has demonstrated an immunosuppressive role and its anti-tumor activity is mild. I personally consider it should be in caution used.

## Barbary Wolfberry Fruit (Gou Qi Zi)



Barbary Wolfberry Fruit presents subreniform, flat and bent upwards, 1.5~1.9mm long, 1~1.7mm wide, pale yellow or brownish-yellow in color. Odorless; taste sweet. It supports the function of liver and kidney, improves type-2 diabetes, anemia, bad vision and male impotence.

**Dr. David Liu's Comment:** Barbary Wolfberry Fruit is also called fructus lycii. It is one of main non-specific immunity stimulating herbs. It contains approximately 1% of betaine and multiple trace elements and several kinds of polyoses. Barbary Wolfberry fruit (ethanol-soluble and water-soluble) extract activate macrophages and prompt proliferation of T cells ex vivo and in vivo. Barbary Wolfberry fruit extract can directly inhibit the growth of multiple types of tumors by damage to DNA of tumor cells. Barbary Wolfberry fruit extract combines with other herbal extracts have good therapeutic effect on liver cancer in human and it also inhibits the growth of carcinomas of stomach, lung and cervix in human when it is taken by mouth.

## Bitter Apricot Kernel (Ku Xing Ren)



Bitter Apricot Kernel is used for treatment of coughing due to seasonal cold or influenza or hay fever. It can be used in combination with Ephedrine herb (in China but not allowed in the USA), Radix Glycyrrhizin for treatment of coughing. For the treatment of constipation due to bowel dryness, it is commonly used in combination with Radix Angelica Sinensis, Radix Peonies Alba, Fructus Cannabis, and others to relax constipation.

**Dr. David Liu's Comment:** Main active ingredients in Bitter Apricot Kernel include 3% amygdalin, D-mandelonitrile- $\beta$ -D-glucoside-6-Dglucoside, emulsion, amygdalase and prunase, prunasin and mandelonitrile. It also contains plenty of Fe, Zn, Cu, Sr, Se, I, Co, Cr, Mn and other trace elements.

Amygdalin is toxic. It has been estimated that 60 pieces of Bitter Apricot Kernel may contain about 1.80 grams of Amygdalin (about 0.030 gram per kilogram body weight) that is toxic. In China, Bitter Apricot Kernel is used in the treatment of patients with cancer of cervix, sarcoma, and liver cancer. From safety point of view, Western people are advised not use Bitter Apricot Kernel in cancer treatment.

## Cassia Bark (Rou Gui)



Cassia Bark is commonly known as Cassia cinnamon and Chinese Cinnamon. The bark and the flower are used in herbal formulas. Cassia bark contains volatile oils.

Cassia Bark is used for type 2 diabetes, flatulence, muscle and gastrointestinal spasms, preventing nausea and vomiting, diarrhea, infections, the common cold, and loss of appetite. In food and beverages, Cassia is used as a flavoring agent.

**Dr. David Liu's Comment:** The combined formula of Cassia Bark with Milkvetch root and Glossy Privet fruit and other herbal extracts has reliable evidence of rising counts of white blood cells, blood platelets, lymphocytes and mononuclear phagocytes. It really works well for whom has hypo-immunity resulting from chemotherapy or radiotherapy.

## Coix Seed (Yi Yi Ren)



This herb is the seed of *Coix Lacryma-jobi* (family Cramineae) grow mainly in Fujian, Hebei and Liaoning provinces in China. Whole plant is harvested in autumn when fruit is ripe. The fruit is picked, husked and dried in sunlight.

Coix Seed is used in the treatment of cancer of digestive tract, lung and ovary, and chorioepithelioma. Its active component, coixeno-lide, promotes cellular immunity and humeral immunity. As an anti-bacterial and anti-inflammatory herbal preparation it is also used in diarrhea, edema, hepatic jaundice, abscess in lungs, appendicitis, chyluria, and others.

**Dr. David Liu's Comment:** When Coix seed extract is used alone it shows a moderate anti-tumor effect. C57BL6 tumor-bearing mice received ester-soluble extract or ethanol-soluble extract of Coix seed at the dose of 10.3mg /day for consecutive 7 days showed anti-tumor therapeutic effect. Mixing 15% of Coix seed powder with 85% of foods to feed tumor-bearing mice demonstrated the inhibition of tumor growth. Coix seed extract activates monocytes. However, Coix seed extract is not the first line anti-tumor herbal medicine and it needs combining with other anti-tumor herbal medicine or chemotherapy to reach the best result.

## **Codonopsis Pilosula (Dang Shen)**



Codonopsis pilosula is one of important medicinal herbs and it increases energy levels and intelligence quotient. Codonopsis pilosula contains over 100 sorts of ingredients and trace elements and amino acids.

The root of Codonopsis pilosula contains saponins, triterpenes and steroid-like substance that is similar to ginseng, but it is milder and has a shorter-lasting medicinal effect.

Codonopsis pilosula increases the levels of hemoglobin and count of red blood cells. It also increases one's endurance to stress. It is taken by mouth for treatment of low energy, poor appetite and malfunction of digestion, anemia, short breathing and heart failure.

**Dr. David Liu's Comment:** Active ingredients of Codonopsis pilosula consist of Condopiloic acid, Codonolactone, Taraxerol, Friedelin, Atractylolide II, and Stigmasteno. These compounds are mainly used to increase the function of cardiovascular system and support hemopoiesis in bone marrow. When Codonopsis pilosula is used alone no evidence of enhanced immunologic activity ex vivo and in vivo was found. However, when Codonopsis pilosula extract is used in combination with Glossy Privet fruit, Milkvetch root and Barbary Wolfberry fruit, this formula can significantly enhance immune function that protects cancer patient from side-effects caused by chemotherapy and radiotherapy, such as anemia, less energy, lower counts of blood cells and blood platelets, immune cells, and bone marrow function.

## Dodder Seed (Tu Si Zi)



Dodder Seed is also named as Semen cuscuses. It supports the kidney, nourishes the liver, improves the vision and strengthens male sex performance. It is one of important medicinal herbs for treatment of male infertility.

**Dr. David Liu' Comment:** Water-soluble extract of Dodder Seed is one of primary herbs in the recipe of treatment of liver cancer in humans. It also has a mild anti-cancer therapeutic effect on human tumor cell lines, including cancer of prostate, breast cancer and lymphoma. Anti-cancer mechanism of this herb is yet unclear.

## Garlic Extract (Da Suan)



Garlic has two main medical ingredients, allicin and diallyl sulphide. Garlic and its organic allyl sulfur components are effective inhibitors of the cancer process. These findings have not yet been verified by clinical trials in humans.

**Dr. David Liu's Comment:** Garlic is a daily food. However, 100% ethanol-soluble garlic extract at the concentration of 40µg to 60µg per milliliter in tissue culture showed significant anti-tumor effect on human breast cancer, prostate cancer, colorectal cancer, and leukemia, lymphoma, and melanoma cell lines. Generally, its anti-tumor effect can be seen by 4 days after starting treatment. Please pay attention to our data that we used highly concentrated ethanol-soluble garlic extract in tissue culture but it was not taken by mouth.

## Ginseng (Ren Shen)



**History of Ginseng:** Ginseng has long been recognized as an herb possessing great value. The first written record of the use of ginseng can be found in a Chinese Herbal dated in the 1st Century B.C. This Chinese Herbal, Shen-Nun Pen Tsar Chin, was surely preceded by a long verbal history of ginseng for in ancient China, ginseng was always held in the highest esteem as a powerful drug.

Ginseng products are popularly referred to as "tonics," a term that has been replaced by "adaptogens" in much of the alternative medicine literature. The term "adaptogen" connotes an agent that purportedly "increases resistance to physical, chemical, and biological stress and builds up general vitality, including the physical and mental capacity for work."

*Panax ginseng* is one of the most commonly used and highly researched species of ginseng. This species, which is native to China, Korea, and Russia, has been an important herbal remedy in traditional Chinese medicine for thousands of years, where it has been used primarily as a treatment for weakness and fatigue.

**Pharmacology:** The main active agents in Panax ginseng are ginsenosides, which are triterpene saponins. The majority of published research on the medicinal activity of Panax ginseng has focused on ginsenosides. These are the compounds to which some ginseng products are now standardized.

Research reviews postulate that extracts of Panax ginseng affect the hypothalamus-pituitary-adrenal axis and the immune system, which could account for many of the documented effects. Animal models and in vitro studies indicate that Panax ginseng enhances phagocytosis, natural killer cell activity, and the production of interferon; improves physical and mental performance in mice and rats; causes vasodilation; increases resistance to exogenous stress factors; and affects hypoglycemic activity.

**Adverse effects and drug interactions** can be difficult because of the variety of available ginseng formulations, and because the exact amount of ginseng in these products may not be identified.

Panax ginseng generally is well tolerated, and its adverse effects are mild and reversible. Associated adverse effects include nausea, diarrhea, euphoria, insomnia, headaches, hypertension, hypotension, mastalgia, and vaginal bleeding.

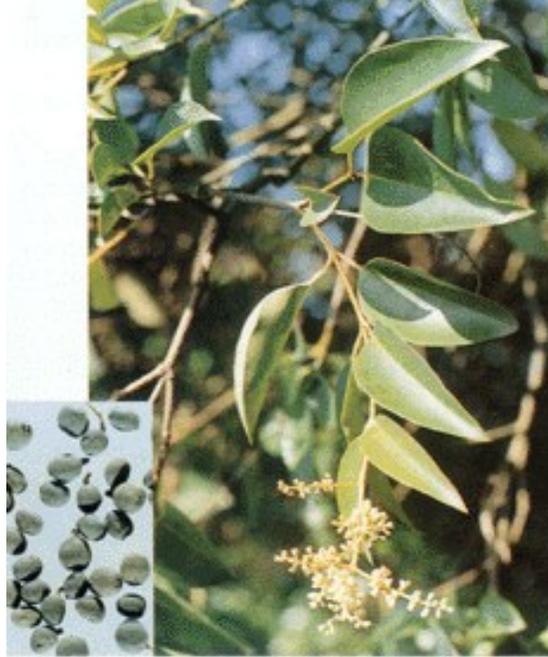
Panax ginseng may interact with caffeine to cause hypertension, and it may lower blood alcohol concentrations. It also may decrease the effectiveness of warfarin (Coumadin). Concomitant use of Panax ginseng and the monoamine oxidase inhibitor phenelzine (Nardil) may result in manic-like symptoms.

**Contraindications** to the use of Panax ginseng include high blood pressure, acute asthma, acute infections, and nose bleeds or excessive menstruation. These effects appear to occur primarily with high dosages or prolonged use.

Ginseng also causes hypoglycemic activity, and caution should be exercised in using ginseng products in patients with diabetes because of possible interactions with oral hypoglycemic agents and insulin. One source recommends avoiding the use of ginseng products in children and in women who are pregnant or lactating, until more rigorous studies prove safety in these groups (Partly cited from the "Ginseng", By Penny Keller)

**Dr. David Liu's Comment:** When ginseng is used as one of main active ingredients in a recipe, it generally takes 5% to 15% of total amount of a recipe to reach the best therapeutic effect. Ginseng doesn't have a role in anti-cancer treatment. However, when ginseng combines with Codonopsis pilosula, Milkvetch root, Barbary Wolfberry fruit, Glossy Privet fruit and others, it can significantly improve general health condition, lift levels of resistance of diseases in physical and mind, increases blood circulation and immunity to support tumor-bearing hosts overcoming the critical-phase of chemotherapy or radiotherapy.

## **Glossy Privet Fruit (Nu Zhen Zi)**



**Properties:** Glossy Privet fruit is sweet and bitter in flavor, supports immune system and function of the liver and kidney.

Glossy Privet fruit is used to treat Yin deficiency of the liver and kidney with symptoms of aching and weakness of the waist and knees, dizziness, tinnitus, premature graying hair, and weak or blurred vision, the herb is often used in combination with chrysanthemum flower, wolfberry fruit, eclipta, dodder seed and other herbs for nourishing the kidney and liver, supporting Yin and improving vision.

Glossy Privet fruit is also employed in the treatment of chronic fever, night sweat and spermatorrhea.

**Dr. David Liu's Comment:** Glossy Privet fruit contains plenty of oleanolic acid which is 3 to 5-fold more than in Spreading Hedyotis herb. Our studies have demonstrated that the role of Glossy Privet fruit extract in anti-cancer treatment is better than oleanolic acid compound. Although oleanolic acid showed some anti-cancer activity, it is only ethanol-soluble in feature that is very difficult to be dissolved in the tissue culture medium. When Oleanolic acid is taken by mouth it causes side-effects of thirsty and fast heart beating. In our comparative studies that the whole extract of ethanol-soluble Glossy Privet fruit is more efficient to kill 14 types of human cancer cells than Oleanolic acid monomer.

Glossy Privet fruit has two significant therapeutic effects in anti-cancer treatment. 1) Glossy Privet fruit extract can kill human lymphoma and leukemia cells. It also showed inhibition of the proliferation of human lymphoma and leukemia cell lines in tissue culture at the dose of 20  $\mu\text{g/ml}$ . Flow cytometry and TUNE studies showed that

Glossy Privet fruit extract induced apoptosis of tumor cells and damage DNA of these tumor cells. 2) It is sure that Glossy Privet fruit extract is able to activate peripheral blood monocytes in tissue culture and macrophages in vivo.

## Golden Thread (Huang Lian)



Golden thread is a *Cuscuta* species. American Indians seem to have harvested the plant while it was in flower, taking the whole plant. They used the plants in a bath for the treatment of tuberculosis. Indians also thought the plant is a useful contraceptive.

**Dr. David Liu's Comment:** Golden thread is the bitterest herb among Chinese medicinal herbs. Golden thread is one of main herbs for treatment of inflammatory or infection diseases in gastrointestinal and urogenital systems, particularly for dysentery and diarrhea. The role of golden thread single herb in cancer treatment is mild and it works by the inhibition of synthesis of DNA and proteins, and by influencing respiration and oxygen intake of tumor cells. This herb along with others can be formulated in the treatment of patients with carcinoma of gastrointestinal tract.

## Houttuynia Herb (Yu Xing Cao)



The herb contains volatile oils, such as decanoyl acetaldehyde, myrcene, d-limonene, 2-methylheptanone, camphene, bornyl acetate, linalool, caryophyllene, and others.

In vitro studies showed that the fresh juice has antibacterial function. The active ingredient of Houttuynia Herb is decanoyl acetaldehyde. In vitro studies have shown that it significantly strengthens the phagocytosis of human peripheral leukocytes against *Staphylococcus aureus*. It also has a diuretic effect. This herb has a markedly anti-inflammatory action on formaldehyde elicited paw swelling in rats. It also showed analgesic and hemostatic effects, antitussive and anti-neoplastic effects, sedative and anticonvulsant effects in mice.

Houttuynia Herb is used as antipyretic agent for the treatment of tonsillitis, bronchitis, pneumonia, urogenital tract infection, edema caused by nephritis, acute dysentery, excessive leukorrhagia, and others.

**Dr. David Liu's Comment:** The extract of whole plant has anti-bacterial effect and boosting immune system. The herb is mainly used in the treatment of infection diseases in upper respiratory tract and allergic syndrome. This plant can induce production of interferons that have important roles in enhancing non-specific immunity in tumor-bearing host. Interferons have anti-tumor and anti-viral activity by involving in signal transduction in cells.

## Indian Bread (Fu Ling)



It is an underground fungus that grows on the roots of various conifers with a reddish brown skin and a hard starchy interior varying in color from pure white to light tan. It is used in both food and medicine. It is one of the most reliable tonics to support kidneys and diuretics in Chinese medicinal herbs. Indian bread extract is important in the treatment of cancer.

**Dr. David Liu's Comment:** In our studies, the ethanol-water-soluble extract of Indian bread displayed significant anti-tumor activity. When the Indian bread extract was added in tissue culture medium at the dose of 60 $\mu$ g/ml, 12 of 14 types of human cancer cell lines showed apoptosis and proliferation of tumor cells was significantly inhibited by 4 days after starting treatment. Indian bread is a non-toxic herb.

## Medicinal Rhubarb Root (Da Huang)



"Rhubarb" grows in the mountains of the Western and Northwestern provinces, and Tibet in China. This plant is found in India, Russia and Turkey.

The parts of the plant used medicinally include both the root and the rhizome. It has a reliable role in clean body and de-toxin of the gut. Rhubarb root is one of main herbs for inflammatory disorders in mouth, throat and upper gastrointestinal tract. Another therapeutic effect of Rhubarb root is to be a mild laxative agent for constipation.

The primary ingredients of Rhubarb root include anthraquinones, chrysophanol, emodin, physcion, sennidine, rheidine, palmidine, tannins, catechin, gallic acid, oxalic acid, rutin, phytosterol, and calcium oxalate.

**Dr. David Liu's Comment:** The active ingredients in Rhubarb root are called emodin, chrysophanol, aloe-emodin, physcion, rhein and sennoside. Hi-tech made Rhubarb root extract can inhibit proliferation of several types of tumor cells, including cancer of breast, lung, liver, and melanoma, by affecting G<sub>2</sub>M of cell cycle.

In addition, Rhubarb root extract can inhibit the release of enzymes and peptides from pancreas, including pancreatic kallikrein, trypsin, pancreatic lipase, and pancreatic elastase, indicating that Rhubarb herb can be used in the treatment of acute pancreatitis which is difficult to be cured with Western medicine.

## Milkvetch Root (Huang Qi)



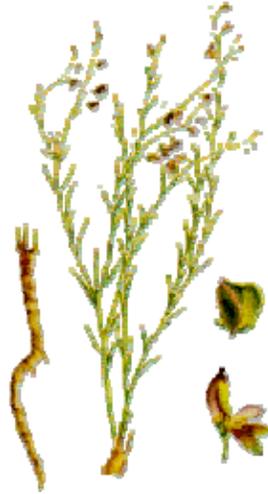
Milkvetch root is one of most common used herbs. It has been used for the treatment of rheumatoid arthritis, early stage of nephritis and nephropathy syndrome, spontaneous night sweating due to weakness and overstrains. It is also used in promoting regeneration of tissue and healing of wound. Milkvetch root has diuresis function to attenuate edema. In addition, it has been used in the treatment of diabetes and anemia through up-regulating blood circulation and hematopoietic system.

**Dr. David Liu's Comment:** Experimental and clinical studies have proven that Milkvetch root is a bi-direction immune-regulator. When it is used at large dose (over 60 grams a day in an adult) it is an immunosuppressive agent. However, when Milkvetch root is used at a proper dose (10 to 20 grams) a day in an adult, it shows enhancement of immunity, including cellular and humeral immunity.

When Milkvetch root extract is used in the tissue culture of lymphocytes induces production of interferon alpha and interferon gamma, and interleukin-2 and interleukin-12, indicating that it is able to active monocytes, macrophages, and T cells. The above results had been repeated in in vivo experiments in normal C57BL6 mice in our laboratory. Expansion of T cells in tissue culture for cancer gene therapy with water-soluble Milkvetch extract at the dose of 60 $\mu$ g to 120 $\mu$ g/ml can strikingly stimulate proliferation of human T cells ex vivo.

For treatment of rheumatoid diseases and nephropathy syndrome, use a high dose of Milkvetch herb. For up-regulation of immunity in cancer patients, use a low dose of Milkvetch herb along with other herbs.

## **Polygala Root (Yuan Zhi)**



Polygala is an extraordinary tonic herbs and it grows mostly in Shanxi, Jilin and Henan provinces. Its root is traditionally used as a Spirit tonic to relax mind, calm emotions and treat insomnia.

Polygala root is used in the treatment of irritability, palpitation, insomnia and bad memory. It can also increase intelligence quotient along with Salvia root, Schisandra fruit, and Codonopsis Pilosula root. Polygala root is one of effective anti-coughing herbs.

**Dr. David Liu's Comment:** Polygala root stimulates the stomach to secrete excessive gastric acids that makes a big stomach and increased appetite. Polygala root extract can destroy membrane of blood cells, particularly in red blood cells to cause anemia if it is used in a large dose and lasted for a long time. Clinically, Polygala in anti-cancer treatment is used to treat fibroma and all kinds of abscess. I personally prefer using it in the treatment of insomnia, hair loss, breast lumps and some of solid malignant tumors.

Polygala root should not be used in patients with reflex esophagitis, gastritis, and gastric ulcer. In a few of cases, Polygala root water-extract may cause mild diarrhea because its stimulation to the gastrointestinal tract.

## **Psoralea Fruit (Bu Gu Zhi)**



Psoralea grows in China, India, Iran, Nepal, Vietnam, and others. Psoralea fruits are collected in autumn when they are ripe, dried in the sun.

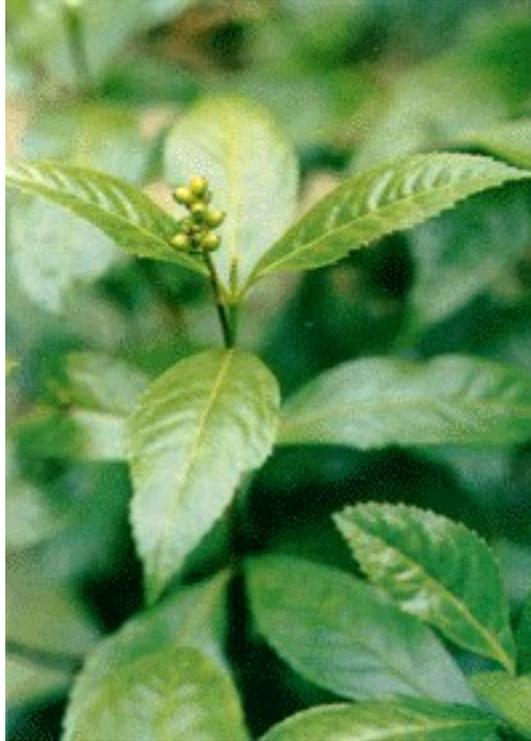
Psoralea fruit is a valued Chinese medicinal herb as a tonic remedy and a general vitality. This herb extract can dilate the coronary artery of heart and increase blood flow to the heart. It can excite the heart, increase cardiac output. The ethanol-soluble preparation of this herb has a light-sensitizing effect (the active ingredient is called Psoralen); therefore, it can be taken internally or used topically. Psoralen and Bakuchiol have anti-nidation and weak estrogen-like effects.

Special attention should be paid to clients who have taken Psoralea fruit extract they may have more pigmentation in skin or eye hurts when he or she is exposed to sunlight.

**Dr. David Liu' Comment:** I personally use Psoralea fruit extract in the treatment of heart failure, coronary heart disease, urine bladder atonia, prostatitis, and night bed-wetting.

Seed or fruits of this herb contain psoralen which is a photosensitizer. Psoralen damages to membrane of normal cells and tumor cells. Psoralen also binds to DNA of cells that induce apoptosis and death of both normal cells, diseased cells and tumor cells. Psoralea fruit extract is also used in the treatment of psoriasis and other skin diseases.

## **Sarcandra (Zhong Jie Feng)**



Sarcandra herb is an anti-bacterial and immunosuppressive agent that has been used in treatment of inflammatory diseases or bacterial infections, autoimmune diseases or rheumatoid arthritis and in healing bone fracture. Studies have shown that sarcandra herb inhibits the function of macrophages and T cells by affect their cell cycle.

Clinical studies have shown that sarcandra herb may prolong patient survival and inhibit tumor growth in patients with carcinoma of esophagus, stomach, liver, pancreas, colon-rectum and lymphoma. The mechanism of sarcandra herb anti-cancer may be attributed to its effect on cell cycle, inhibiting proliferation of cells and DNA synthesis of tumor cells.

**Dr. David Liu' Comment:** Although it has been reported that inhibition of tumor growth in 57% experimental animals that treated with sarcandra herbal preparations, its anti-tumor effect is inconstant or instable. Sarcandra, therefore, is not a good anti-cancer candidate herb because of it curtails immunity in tumor-bearing host. From safety point of view, Western people are advised not use Sarcandra herb in cancer therapy.

## **Spreading Hedyotis Herb**

## (Bai Hua She She Cao)



Spreading Hedyotis herb is sweet and salty in taste, warm in nature, and supports to the Liver Channel. The herb is highly effective against tetanus infections and attenuate spasm-convulsions.

Spreading Hedyotis herb is a commonly used anti-inflammatory herb for infections in respiratory and urogenital tracts. Spreading Hedyotis herb is also used in the treatment of appendicitis and hepatitis.

**Dr. David Liu's Comment:** It has been currently identified that Spreading Hedyotis herb has at least 5 active ingredients including oleanolic acid and p-coumaric acid and others. The anti-cancer active ingredient in this herb is oleanolic acid that has been purified from both spreading hedyotis herb and glossy privet fruit. Oleanolic acid has shown to kill multiple types of human leukemia and lymphoma cell lines ex vivo and in vivo.