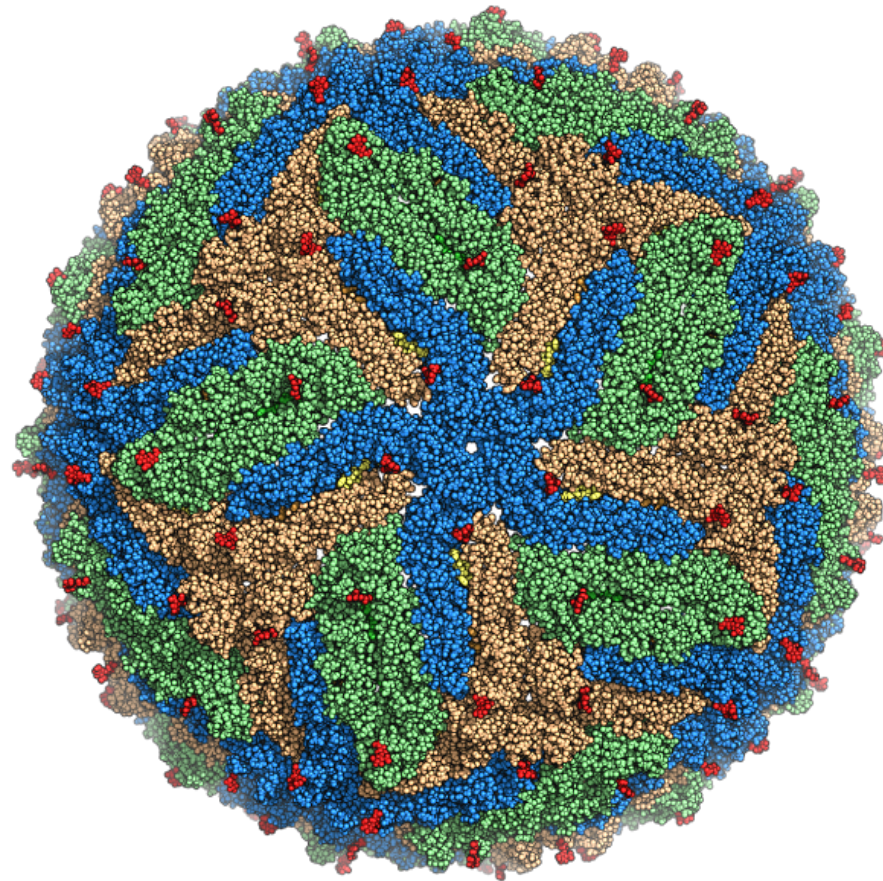


Three Unrivaled Antiviral Herbs



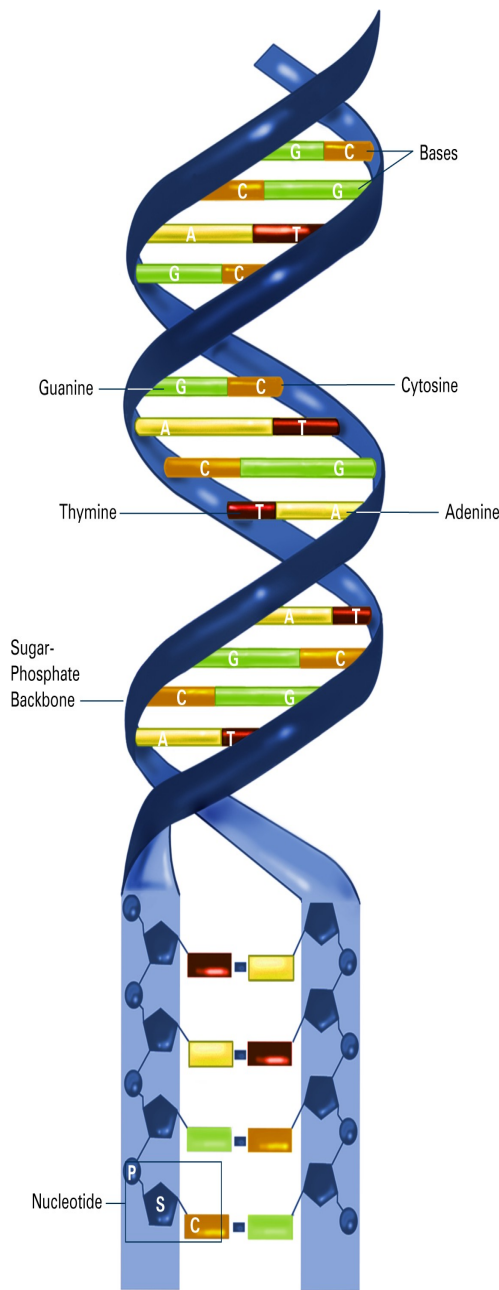
Sharlene Peterson, HHP, MH, CMH
© 2022 Genesis School of Natural Health

Andrographis paniculata



- **Immune Modulating/Stimulating** activities include inhibition of virus replication and pathogenesis, enhancing natural killer cell activity, cytotoxic T-cells, phagocytosis, and antibody-dependent cell-mediated cytotoxicity. Natural killer cells (NK) are a type of lymphocyte (a white blood cell) and a component of the innate immune system. NK cells control viral infections while the adaptive immune response is generating antigen-specific cytotoxic T-cells that can clear the infection. Individuals with deficient amounts NK cells are highly susceptible to herpetic virus infections, virus-induced cancers and cancer in general. Natural killer cells mediate cytotoxicity against tumors.
- **Antiviral:** Andrographolide (main phytochemical) has shown significant activity against the following viruses: Influenza A, Herpes simplex, Epstein-Barr, and Flaviviruses (West Nile, Dengue, Tick-borne encephalitis, Yellow fever...). It has also been shown to reduce HIV symptoms.
- **Antibacterial** actions include **inhibiting bacterial pathogenic factors** (toxins, surface coats that inhibit phagocytosis, surface receptors, etc.), and down-regulating infectious inflammation caused by bacteria. Viral infections often result in secondary bacterial infections. **“Mammalian cells are prone to bacterial attachment during a viral illness.** Viruses can debilitate the mucociliary clearance structure, leading to the increased attachment of bacteria to mucins and colonization; moreover, the condensed mucus will impede the penetration of antibacterial material and immune cells.” - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4554399/#!po=13.8889>

Andrographis paniculata



- **Antitumor/Anticancer Activities:** Andrographolide, a diterpenoid lactone phytochemical from *Andrographis*, has been shown to inhibit the proliferation of a variety of cancer cells, including: leukemia; breast cancer; prostate cancer; colon cancer; lung cancer; and melanoma cells
“Andrographolide decreased prostate tumor growth, decreased matrix metalloproteinase 11 expression, decreased angiogenesis and altered DNA repair genes such as BRCA2, ATM, BRIP1 in vivo. Furthermore, we suggest a possible mechanism of action through which andrographolide inhibits cancer progression by modulating DNA repair genes.” (www.ncbi.nlm.nih.gov/pmc/articles/PMC6383681)
- **Antioxidant** constituents found in *Andrographis* greatly increased the activities of antioxidant defense enzymes such as catalase (breaks down hydrogen peroxide to water and oxygen), superoxide dismutase (helps break down potentially harmful oxygen molecules in cells), and glutathione-S-transferase (a family of Phase II detoxification enzymes).
- **Anti-inflammatory** actions of *Andrographis* markedly reduce the inflammation in rheumatism, joint inflammation, and arthritis. It also reduces the inflammation caused by histamine and adrenaline.
- **Antimalarial:** In vivo studies show that *A. paniculata* produced **significant** antimalarial effects.

A Couple of Definitions

- **Matrix Metalloproteinases** (MMPs) are a family of at least 15 zinc-dependent endopeptidases (enzymes) capable of breaking down essentially all components of the extracellular matrix (collagen, enzymes, and glycoproteins that provide the structural and biochemical support to surrounding cells). MMPs are important enzymes for “remodeling” during tissue growth and repair and angiogenesis. Our body has tissue inhibitors of metalloproteinases to maintain a balance between matrix destruction and formation. Insufficient intake of vitamins A, C, D, E, folate, B12, CoQ10, and omega-3 fatty acid DHA contributes to increased homocysteine and oxidative stress leading to altered levels of MMPs and their inhibitors. Excessive degradation of extracellular matrix occurs in rheumatoid arthritis and osteoarthritis. In both diseases, inflammatory cytokines such as interleukin-1 beta and tumor necrosis factor-alpha stimulate the production of matrix metalloproteinases.
- **Angiogenesis** is the formation of new blood vessels to allow the delivery of oxygen and nutrients to the body's tissues. Tumors (cancer cells) can not get “larger than a fraction of an inch” unless they develop a blood supply and they do this by releasing vascular endothelial growth factors (VEGF) to start the process of angiogenesis. The vasculature formed under the influence of VEGF is structurally and functionally abnormal - blood vessels are irregularly shaped, tortuous, have dead ends and are not organized into venules, arterioles and capillaries. In healthy humans, VEGF is an important factor for wound healing and it promotes angiogenesis during embryonic development. Cancer cells exploit natural processes within the body.

Andrographis paniculata

“King of Bitters”



Plant Parts Used: Leaves

Andrographolide is a major bioactive phytochemical that is found in various parts of *A. paniculata*, but particularly in the leaves.

Taste/Temp: Bitter and Cold (use to clear heat)

Adult Dosage: Generally 100 - 300 mg daily for 6-12 weeks

Preparing a Tincture: 45-55% alcohol

It has been traditionally contraindicated in pregnancy, during lactation, and for children (use dosage appropriate for the age and weight of a child).

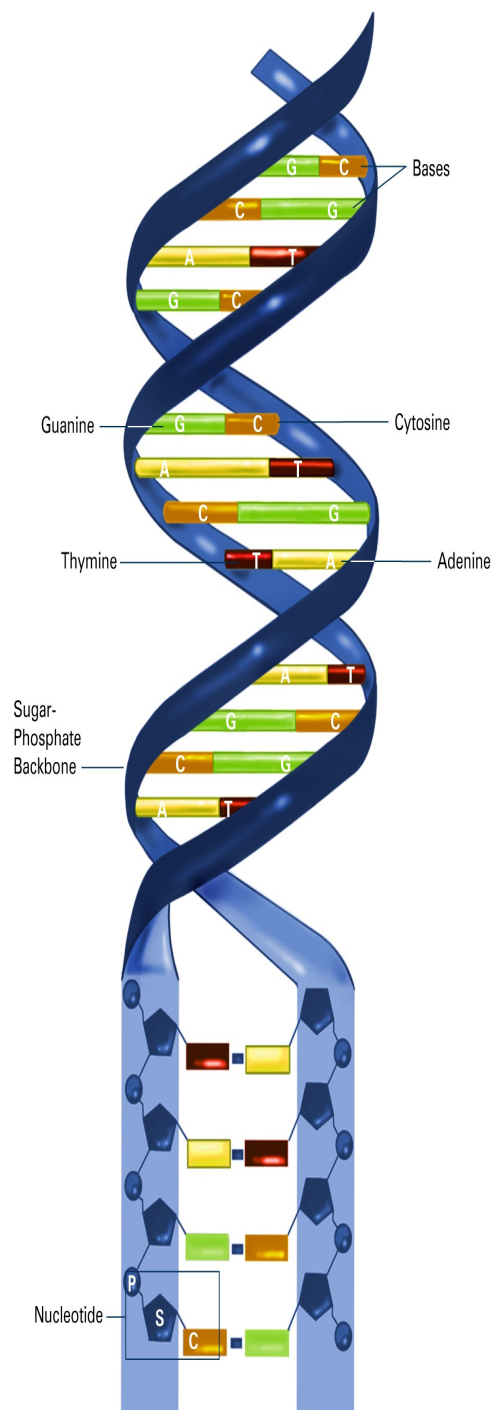
Andrographis has demonstrated immune stimulating properties that are not suitable for uncontrolled or active states of autoimmune disease. Do not use longer than 6 weeks during controlled states of autoimmune disease.

Uncaria tomentosa (Cat's Claw/Uña de Gato)



- **Cat's claw has an immunomodulatory role**, not an immune-stimulatory effect. This makes the extract suitable for conditions where the immune response is excessive (uncontrolled or active autoimmune).
- **Immune modulating** activities include suppression of NF-kappa B, enhancement of B and T-lymphocytes, and the stimulation of phagocytosis. Increased NF-kappa B tissue activity is associated with cellular aging and numerous age-related degenerative diseases including Alzheimer's, diabetes, and osteoporosis. The extract also increases the quality of splenic white pulp (lymphoid tissue that stores B and T-lymphocytes) and the thymic medulla (lymphoid progenitors which have developed in the bone marrow migrate to the thymus to maturation into functional T cells).
- **Antiviral:** Studies reveal that the inhibition of viral attachment in the host cells was the main mechanism of antiviral activity. A second mechanism was found with the xindole alkaloids from *Uncaria tomentosa* which induced apoptosis (cell death), favoring elimination of virus infected cells. Antiviral activity of cat's claw has focused mainly on dengue fever virus, vesicular stomatitis virus (VSV, a minus-strand RNA virus), and rhinovirus type 1B infection in HeLa cells. Topically, cat's claw cream is antiherpetic for both herpes simplex virus type 1 and type 2.

Uncaria tomentosa (Cat's Claw/Uña de Gato)



- **Anticancer:** *Uncaria tomentosa* is a non-specific immunomodulating agent, cytoprotective against oxidative damage, exerts direct **antiproliferative activity** on the MCF7 human breast cancer cell line, and has antimutagenic activity (**protects DNA from mutations**). Immune modulating activities suppress NF-kappa B (a protein complex that controls transcription of DNA, cytokine production and cell survival) activation. “Aberrant NF-κB activation has been implicated in the pathogenesis of several human malignancies including hematological malignancies and cancers of the breast, colon, skin, lung, esophagus, uterine cervix, pancreas and prostate”. (www.ncbi.nlm.nih.gov/pmc/articles/PMC4574560/)
- **Anti-Inflammatory and antioxidant** activities include inhibiting the production of the pro-inflammatory cytokine TNF-alpha in arthritis, gastritis, osteoarthritis, and other inflammatory conditions (acute or chronic). Osteoarthritis and rheumatoid arthritis are conditions in which TNFα production is excessive. Cat's claw is cytoprotective (stimulates mucus production and enhances blood flow throughout the lining of the gastrointestinal tract) and prevents the side effects of nonsteroidal anti-inflammatory drugs on the intestine.
- **Antibacterial effects:** In a laboratory study, micropulverized *Uncaria tomentosa* showed antimicrobial activity on Enterobacteriaceae, *Streptococcus mutans*, and *Staphylococcus* spp.

Uncaria tomentosa (Cat's Claw/Uña de Gato)



The inner bark of the vine has traditionally been used for boiled decoctions and extracts. In recent years, extracts of the root have also been prepared commercially but they do have a different phytochemical profile than the bark of the vine. Whole-plant extracts are considered a non-specific immunomodulating agent.

- **Decoction for the sensitive or elderly:** 20-30 g slowly boiled in 1 quart water for 1- 3 hours until volume is reduced by 1/3; drink one cup 1-3 times per day depending on how they respond (nausea is the most common response to determine dose in the sensitive).
- **Decoction (Traditional):** use 100 grams per liter of water, slowly boiled for 1- 3 hours until volume is reduced by 1/3; 2-3 cups per day
- **Capsules:** 250-500 mg; once per day (higher doses may inhibit T-lymphocyte proliferation)
- **Tincture:** (1:5) 1- 2 ml; 2 times per day
- **Prepare Tincture** with 65-75% alcohol (traditionally 50-65%)
- **Contraindications:** Pregnancy, lactation or in children less than three years old. Patients undergoing grafts and organ transplants, hemophiliacs, and use caution in SLE (lupus).

Uncaria tomentosa (Cat's Claw/Uña de Gato)



- **There are two known *Uncaria* species**, *Uncaria tomentosa* and *Uncaria guianensis*, that share similar phytochemicals. They are used interchangeably in traditional medicine in South America for their anti-inflammatory properties.
- **Constituents include:** oxindole alkaloids (isopteropodine, pteropodine, mitraphylline, isomitraphylline, rynchophylline, and isorynchophylline), triterpenes, proanthocyanidins, polyphenols, glycosides, beta-sitosterol, stigmasterol and campesterol, catechin tannins, epicatechin, proanthrocyanidins and flavonoids.
- **Synergy:** Some studies indicated that anti-inflammatory activity of *U. tomentosa* extracts is independent from their alkaloid content and support the observation that both anti-inflammatory and antiviral activity are due to a combination of active compounds - synergy. “Activity from the samples under investigation seemed to be associated with the presence of polyphenols or their synergistic effect with oxindole alkaloids or quinovic acid glycosides...purified fractions did not present activity when evaluated alone.” (Food Chem Toxicol. 2014 Apr;66:30-5. doi: 10.1016/j.fct.2014.01.013.)

Astragalus membranaceus



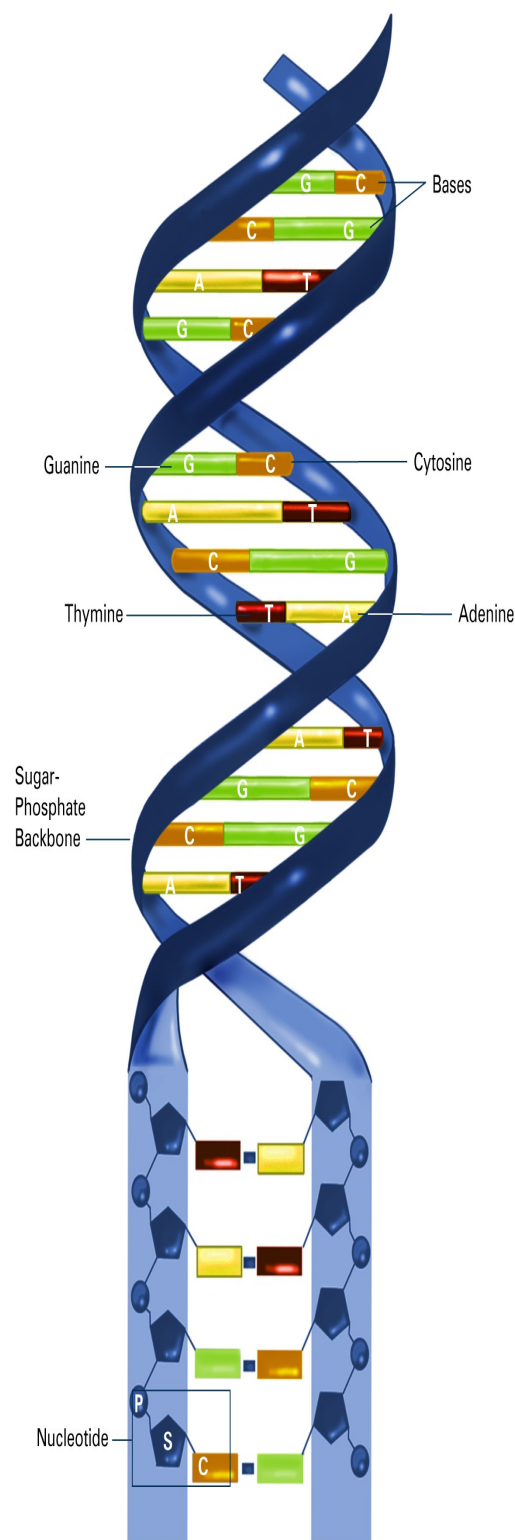
- **Immune Modulating and Antiviral:** the antiviral activity of *Astragalus* is likely due to its ability to stimulate the mobilization of immune cells into circulation from peripheral tissues/organs rather than inducing the formation of new cells from the bone marrow - basically positioning the immune cells for activity. Astragalus promotes antibody production, restores impaired T-cell functions, increases thymus and spleen function, and can **activate macrophages to increase the release of immune response mediators which improves host defenses to avoid infections**. In addition, during an infection, *Astragalus* has been shown to enhance antibody production.
- Astragaloside IV (phytochemical) has been reported to **protect cells from mitochondrial dysfunction** through anti-oxidant actions. The importance of mitochondria goes beyond ATP energy production. Mitochondria mobilize immunity by regulating both metabolic and physiologic states in immune cells. Cell health protection may explain why *Astragalus* is known to be anti-aging, vitality producing, and cancer preventive.
- Interferons are signaling proteins made and released by our cells in response to the presence of viruses. When interferons are released they cause nearby cells to heighten their anti-viral defenses. *Astragalus* polysaccharides have been shown to **induce interferon production and increase the actions of interferon during viral infections**.

Astragalus membranaceus



- **Antibacterial:** “Among the 10 extracts, only 5 exhibited a bacteriostatic effect. The most significant being whole plant ethanolic fraction which exerted its effects on three bacterial strains (*Staphylococcus epidermidis*, *E. coli*, and *P. aeruginosa*), with the lowest being 12.78 mg/ml for *S. epidermidis* and it is also notable that *P. aeruginosa* was the most sensitive organism where 3 fractions were able to suppress its growth (brown stem ethanolic, aqueous green stem and whole plant ethanolic fractions) with the lowest being that of whole plant ethanolic at 102.2 mg/ml. The other fractions’ MICs [minimal inhibitory concentration] ranged between 188.7 mg/ml for leaves ethanolic on *S. epidermidis* to 546 mg/ml of flowers ethanolic fraction on *S. aureus*...in general, all our extracts were able to eradicate the ***S. epidermidis* preformed biofilm** but with variable patterns... It is not surprising that bactericidal activity was also detected with our leading extract which is the **whole plant** ethanolic fraction, which was the only extract with bactericidal activity and that was against 3 strains as well. This could be due to a potential **synergistic** effect between the different phytochemical constituents found in the whole plant.” (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5289088/>)
- *Astragalus* is also valued for its **anti-diabetic, cardio-protective, anti-inflammatory, and antioxidant actions**. Chinese studies have shown that taken within 36 hours of a heart attack, astragalus increases the pumping ability of the heart’s left ventricle, the part of the heart often damaged in a heart attack. According to animal and human studies, saponins, isoflavones and polysaccharides in astragalus can lower blood glucose. Astragalus also acts as an antioxidant, increasing superoxide dismutase and decreasing lipid peroxide activity.

Astragalus membranaceus



- Most studies evaluating the effects of *Astragalus* on immunity have used cancer models and patients undergoing chemotherapy. Radiation and chemotherapy reduce the body's natural immunity which can cause a variety of problems. But when astragalus is used, patients recover faster. In China, astragalus is commonly used in conjunction with radiation and chemotherapy.
- Preliminary studies suggest *Astragalus* may have anti-tumor effects, specifically against melanoma and leukemia. "Astragalus has been associated with prolonged survival times in acute myeloid leukemia patients, and data suggest beneficial effects when used with chemotherapy." (Memorial Sloan Kettering Cancer Center)
- "*Astragalus membranaceus* (Huangqi), as one of the most important Qi tonifying **adaptogenic herbs** in Traditional Chinese Medicine, has a long history of medicinal use...It is valued for its ability to strengthen the primary energy of the body which we know as the immune system, as well as the metabolic, respiratory and eliminative functions. This fact is being increasingly substantiated by pharmacological studies showing that it can increase telomerase activity, and has antioxidant, anti-inflammatory, immune-regulatory, anticancer, hypolipidemic, antihyperglycemic, hepatoprotective, expectorant, and diuretic effects... *Astragalus membranaceus* can inhibit the proliferation and induce apoptosis of colon cancer. *Astragalus membranaceus* inhibited cell proliferation by accumulation in S phase and G2/M arrest and promoted apoptosis in human colon cancer cells HT-29." (www.ncbi.nlm.nih.gov/pmc/articles/PMC5758356)

Astragalus membranaceus

Dosage:

- The traditional daily Chinese dose is 9 to 15 g of the dried sliced root, simmered in a quart of water for several hours until the water is reduced to one pint.
- A typical capsule contains up to 500 mg of the root. A recommended dose of three grams might consist of two capsules, three times a day.
- Pregnant or nursing women should not use the astragalus root. Long-term use is not recommended for individuals with autoimmune conditions.

Part used: Root **Preparing Tincture:** 80% alcohol (ratio of 1:5)

Constituents: More than 200 compounds have been isolated and identified from *Astragalus membranaceus*. Triterpene saponins are major constituents ranging from 0.5 mg/g to 3.5 mg/g. Five major saponins (astragalosides I, II, and IV, and isoastragaloside I and II) represent more than 80% of the total *Astragalus* triterpene saponins, and astragaloside IV is known as the qualitative control biomarker. More than 63 flavonoids have been found within the range of 0.5–3.0 mg/g. Fourteen polysaccharides have been identified and 13 of them have β -D-(1→3)-galactan moieties branched with β -D-(1→3)-galactooligosaccharide side- chains. Other components found include amino acids, fatty acids, and trace elements. (Pharmacopoeia Commission of the People's Republic of China, 2015)



Herbal Notes

Andrographis (antiviral, antibacteria, anti-malarial, anti-inflammatory, anti-cancer, inhibition of virus replication) - Stimulating* Immune Modulator

Cat's Claw (antiviral, antibacteria, anti-malarial, anti-inflammatory, anti-cancer, deep chronic conditions) - Immune Modulating

Astragalus (antiviral, antibacteria, anti-malarial, anti-inflammatory, anti-cancer, cardio-protective, adaptagen) - Stimulating* Immune Modulator

***Immune stimulating properties are not suitable for uncontrolled or active states of autoimmune disease. Individuals may use Andrographis short-term if not in an acute reactive stage, 2-4 weeks at a time.**

Directional & Supportive Herbs: Many are antiviral and support organs for viral clearance

Lemon Balm (nerves)(shingles/herpes..) (an infusion of lemon balm, peppermint, and sage is an effective antiviral)

Red Clover (lymph/lungs/skin) - works best with other alteratives like Burdock, Oregon grape, Echinacea, and more

Sambucus (sinus/lungs) - most effective during the virus infection compared to the beginning infective stages

St. John's Wort (nerves/liver/skin)(herpes...)

Hawthorn (heart/circulation)

Ginkgo (brain/CNS)

Milk Thistle (liver) (hepatitis/EBV)

Echinacea (lymph/respiratory)(general)



GenesisSchoolOfNaturalHealth.org

Diploma Courses include:

**Holistic Health Professional, Natural Health Consultant, Master Herbalist,
Clinical Master Herbalist, Aromatherapy Consultant, and more.**