Ethno Health Products

Forsythiae 10

(Pronounced “For-sith-ee-ya”)

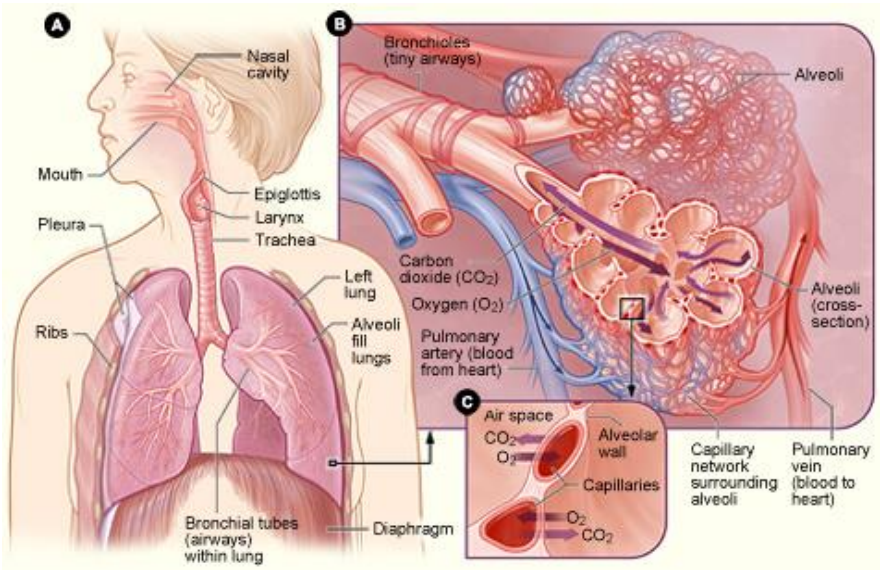
Recipe: Yin Qiao San
(Pronounced “Yin Chee-ow San”)

“Removes pathogenic wind from the muscle layer, harmonizes, strengthens defensive qi, eliminates wind, heats and releases toxins.” (Ethno, 2021).

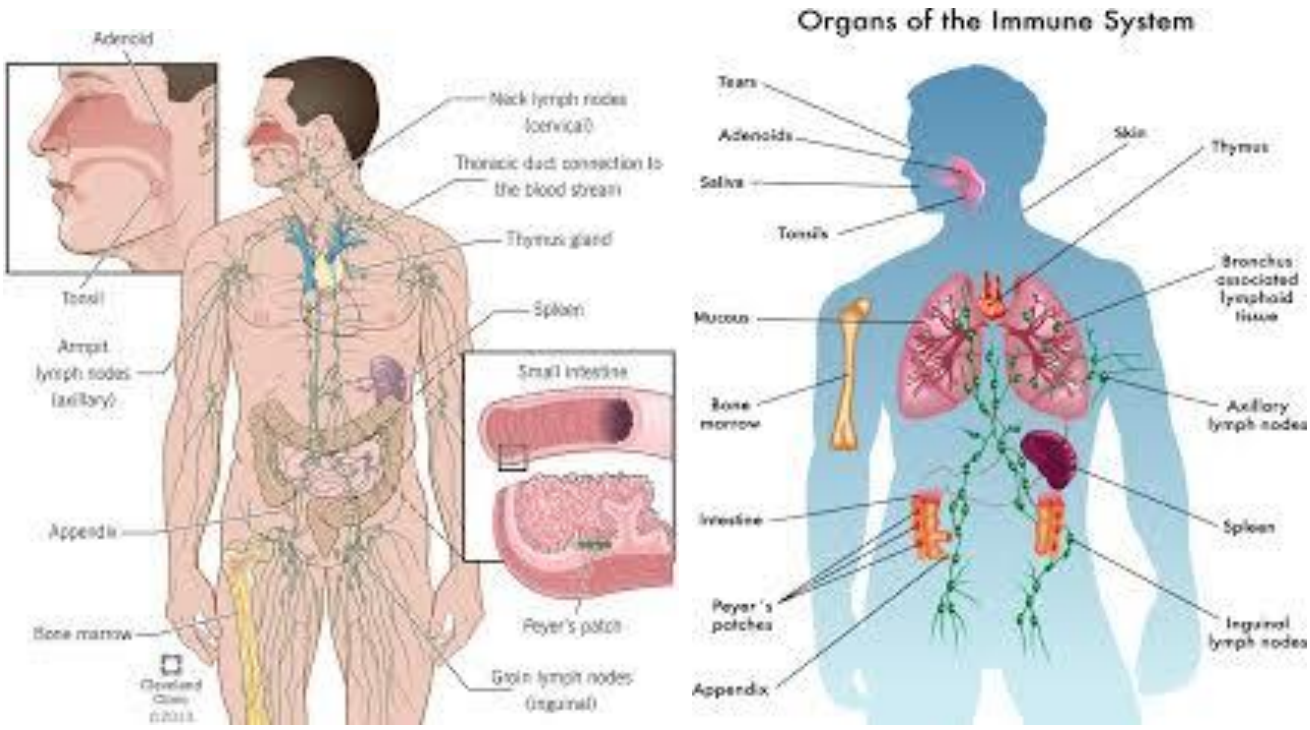
This recipe has historically been used for the respiratory tract, dating back to the Quing (pronounced “Ching”) Dynasty, 1644-1911.

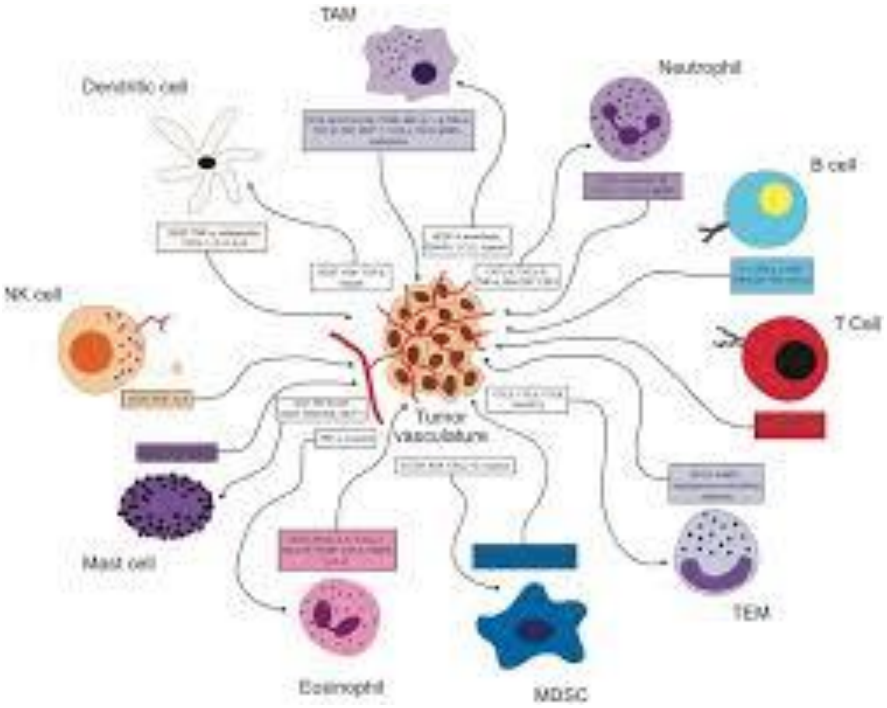
Respiratory System

When air is inhaled, oxygen enters the blood vessel network of the lungs and is absorbed into the blood stream. Oxygen (O2) is carried via the blood vessels through the heart and throughout the entire circulatory system right down to the tiniest blood vessels, the miles of capillaries. At the capillary level, lung alveoli is where the gas exchange takes place, where via the veins, carbon dioxide (CO2) is circulated back to the lungs, to be exhaled.



The Immune System





To learn the function of each type of immune cell, visit https://www.niaid.nih.gov/research/immune-cells

Mary Esther Gilbert, MSc, BSc, March 3, 2021

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Product Ingredients

Japanese Honeysuckle Flower Extract *(Lonicera japonica Thunb)*

10:1
10% Extractable Matter From the Flower
Contains 16.7% active substances in weight (16.7g per 100g).

- Used for thousands of years in China known as Jin Yin Hua, and also known as Ren Dong.
- Listed in the Pharmacopoeia of the People's Republic of China since 1995, with over 500 recipes containing L. japonica.
- Was used for febrile conditions (fever), nasal discharge, yellow phlegm, sores carbuncles and some infectious conditions.
- Has become naturalized in Argentina, Australia, Brazil, Mexico, New Zealand, and the United States.
- More than 140 phytochemical compounds have been found, with a wide range of pharmacological actions.
    - Essential oils: linalool, hexadecanoic acid, octadecadienoic acid, ethyl palmitate and dihydrocarveol.
    - Organic acids
    - Flavones
- Modern pharmacological studies show L. japonica to contain active principles:
    - Anti-inflammatory
    - Antiviral: respiratory syncytia virus, coxsackie B3 virus, adeno-associated 7 viruses, adeno-associated 3 viruses and Coxsackie B5 virus.
    - Proven to be effective against viruses: anti-RSV, anti-HIV, anti-HSV, anti-PRV and anti-NDV viruses.
    - In 2003, *Lonicera japonica* was the most popular TCM against the SARS coronavirus in China.
    - Antibacterial: works against *Escherichia coli*, *Sarcina luteus*, *Bacillus subtillis, Staphylococcus aureus, Listederia monocytogenes ATCC 19116, Salmonella enteritidis KCTC 12021*, *Salmonella typhimurium KCTC 2515*, and *Enterobacter aerogenes KCTC 2190*
    - Anti-endotoxin
    - Antipyretic
    - Helps reduce blood lipid levels.

- Is shown to have hepatoprotective (liver protective) activities.
- Extensively studied compounds:
    - Essential oils
    - Organic acids: chlorogenic acid, isochlorogenic acid, caffeic acid, hexadecanoic acid, tetraacetyl-phthalein chlorogenic acid, and myristic acid.
    - Chlorogenic acid effective against
    - So far, 30 flavones have been isolated: quercetin-3-O-β-D-glucoside, luteolin-7-O-α-D-glucoside, luteolin-7-O-β-D-galactoside, and hyperoside, corymbosin, and 5-hydroxy-3′,4′,7-trimethoxylflavone.
    - Saponins, triterpenoids, loniceroside C, D and E show *in vivo* (live test subjects) anti-inflammatory activity.
    - Iridoids: anti-tumor, anti-inflammatory, antioxidant activity.
    - Inorganic elements (minerals): iron (Fe), manganese (Mn), Copper (Cu), Zinc (Zn), Calcium (Ca), and other trace elements.
    - Directly inhibits COX-1 AND COX-2 inflammatory proteins.
- May be beneficial as a chemopreventive agent.
- Induced cancer cell destruction in lung cancer cells.
- Shows antihyperlipidemic (reduces or prevents high blood lipids).
- Demonstrates antithrombotic activities; protects blood vessels against damage and therefore formation of clots that impede blood flow that may lead to stroke or heart attack (Shang, et. al., 2011).

Golden Bell Fruit Extract *(Forsythia suspensa)*

10:1
10% Extractable Matter From the Flower
Contains 16.7% active substances in weight (16.7g per 100g).

- A common traditional botanical in China, Japan and Korea, used for pyrexia (elevated body temperature, fever), inflammation, gonorrhea, carbuncle (infection, boils) and erysipelas (bacterial skin infection).
- Classical Chinese herbal texts and Pharmacopoeia state that *F. suspensa* is heat-clearing and detoxifying.
- Has a bitter flavor, is slightly cold nature, addresses the lung meridian.
- Science has identified more than 230 phytochemical compounds. At least 211 have been isolate from the fruits.
- Fruit compounds that have exhibited anti-inflammatory, antioxidant, antibacterial, anti-virus, anti-cancer and anti-allergy effects include: Lignans and phenylethanoid glycosides such as forsythiaside, phillyrin, rutin and phillygenin.
- Antiviral, antibacterial, anti-cancer, neuroprotective, due to detoxifying effects of the lignans and phenylethanoid glycosides (Wang, et. al., 2017).
- Another study isolated eight new diterpenoids, three new lignans, one new iridoids and a triterpernoid, most of which showed anti-inflammatory activity against specific free radicals *in vitro (Journal, 2017).*
- One such free radical known to have a role in the body's inflammation is reactive oxygen species (ROS). In one study, rats orally fed *F. suspensa* produced a net effect of inhibiting the inflammatory response against liver injury (Zhao, et. al., 2017).
- The Chinese Materia Medica indicates use for diabetes and other diseased conditions.
- For four weeks, a team of researchers studied *F. suspensa* for its effects on diabetes on their test subjects. Findings were:
    - Significant decrease in blood glucose (blood sugar) and improved glucose tolerance.
    - Improved levels of insulin secretion by the pancreas.
    - Decreased triglycerides (blood lipids) in the blood and in the liver.
    - Lowered total cholesterol.
    - Lowered creatinine excretion, acid phosphatase, alkaline phosphatase, aspartate transaminase, alanine transaminase.
    - Researchers concluded that *F. suspensa* shows promise for attenuating high blood glucose and high blood fat levels in diabetes (Zhang, et. al., 2016).

Chinese Field Mint Herb Extract (*Mentha haplocalyx Briq.*)

10: 1
10% Extractable Matter From the Herb
Contains 10.0% active substances in weight (10.0 g per 100 g).

- A traditional Chinese medicine widely used in the southwest area of China.
- As a TCM, is used in Chinese clinics for conditions in the nervous system, respiratory, reproductive and digestive systems.
- Also used in food and cosmetics.
- Biological actions:
    - Antimicrobial
    - Anti-inflammatory
    - Antioxidant
    - Antitumoral
    - Protects the gastrointestinal tract.
    - Protects the liver.
- Contains a large number of viable, beneficial compounds, including polyphenolic acids, flavonoids, monoterpenoids, and glycosides.
- Other findings important in controlling excess blood sugar involve the compounds monoterpene glucosides and the ionone glycosides in *M. haplocalyx Briq.*:
    - The above compounds were found to downregulate the α-glucosidase enzyme the body produces, involved in the process of converting a starch (such as glycogen) to a simple sugar (such as glucose).

      Glucosidase enzymes reduce large starch molecules to simple glucose sugar molecules during digestion, leading to a temporary increase in blood sugar levels.

  (He, et. al., 2019)

Balloon Flower Root Extract *(Platycodon grandiflorus)*

10:1
10% Extractable Matter From the Root
Contains 10.0% active substances in weight (10.0 g per 100 g).

- As a food, Korea's annual domestic consumption as of 2001 was over 4,000 tons.
- Roots are cultivated for four years before harvesting.
- Koreans use *P. grandiflorus* for bronchitis, asthma, diabetes, inflammatory diseases, and tuberculosis.
- In Traditional Chinese Medicine, is used as an expectorant, and for coughs, colds, chest congestion, sore throats and tonsillitis.
- The root contains a wide array and concentrations of potent antioxidant phytochemical compounds known as saponins.
- Saponins:
    - Roots contain twenty-four kinds of triterpenoid saponins, including platycodin A, platycodin C, platycodin D, platycodin D2, polygalacin D, and polygalacin D2.
    - Exhibit cytotoxic effects against cancer cells.
    - Protect the nervous system.
    - Antiviral
    - Anti-ulcerogenic
    - Cholesterol lowering effects with fecal excretion of bile acids in fat metabolism and thereby lowering blood lipid and cholesterol levels.
    - Protect against diabetic retinopathy (blood vessel damage in retina, behind the eye).
    - Studies report *P. grandiflorus* was shown to prevent tumor cell metastasis (spreading).
    - Shown to have protective effects against ischemia/reperfusion injury (cell dysfunction or cell death).
    - Prevent dental caries.
- Platycosides are found to have strong potential:
    - Against cancer, by affecting the signaling system in cancer cells, and consequently preventing their multiplication or proliferation.
    - Against Alzheimer's, with the potential as neuroprotective agents.
- Platycodin saponins' pharmacological potential has raised interest for:
    - Obesity and metabolic syndrome.
    - Hyperlipidemia
    - Hypertension
    - Diabetes
    - Anti-inflammatory activity.
    - Anti-allergy activity.

    - Augmenting immune system responses.
    - Improve skin cell turnover through apoptosis or destroying spent cells.
    - Protecting the liver against toxicity and oxidation (free radical damage).
- Carbohydrates in the *P. grandiflorus* roots:
    - Monosaccharides: glucose, fructose
    - Disaccharides: saccharose, trisaccharides (kestose), polysaccharides (inulin, platycodin).
- Effective against cell-damaging free radicals that lead to protein, lipid and DNA damage, which in turn leads to oxidative stress and is linked to the disease processes that result in various inflammatory conditions, cancer, diabetes, liver damage, atherosclerosis or hardening of the arteries, nerve degeneration, and others.
    - Reactive oxygen species (ROS)
    - Superoxide anions
    - Hydrogen peroxide
    - Hydroxyl radicals
    - Peroxynitrite radicals
- Found to be effective against bacteria that cause infections of the bronchial tubes in the lungs:
    - *Mycobacterium* sp., *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Corynebacterium diphtheriae*, and *Streptococcus pyogenes*
- Found to be effective against food poisoning bacteria:
    - *Escherichia coli* O157:H7 and *Bacillus cereus*

(Nyakudya, 2014)

Burdock Fruit Extract (*Arctium lappa L.*)

10:1
10% Extractable Matter From the Fruit
Contains 10.0% active substances in weight (10.0 g per 100 g).

- Used in Asia, Europe and North America for hundreds of years.
- Roots, seed and leaves have been studied since it is so popular in Traditional Chinese Medicine.
- Found to improve blood circulation to the skin's surface, and improve skin quality and abnormal skin conditions such as eczema.
- Contains antioxidant and antidiabetic phytonutrient compounds.
- Has shown to have anti-inflammatory actions and to inhibit the growth of tumors such as pancreatic cancer.
- Other active compounds inhibit the proliferation of microorganisms.
- Practitioners in non-Western medical systems around the world have reported positive uses for cancers, diabetes, and AIDS (Chan, et. al., 2011).
- One study examined the performance of one of *A. Lappa L.'s* phytochemical compound, arctigenin, against various cancer cell lines *in vitro*, identifying it as a cytotoxic and antiproliferative agent against lung, stomach and liver cancer cells (Susanti, et. al., 2012).
- A team of researchers tested the molecular compound arctigenin in *A. Lappa L.,* already known for its anti-tumoral, anti-inflammatory actions, and found:
    - Improves the regulation of metabolic actions (AMPK phosphorylation) in nervous system signaling pathways that balance nutrient supply and energy needs (Willows, 2017).
    - (AMPK has been shown to balance blood sugar and lipid level profiles, and blood pressure.)
    - Stimulates glucose uptake into muscle cells.
    - Inhibits gluconeogenesis and lipid synthesis in liver cells.
    - Chronic intake of arctigenin lowers blood glucose levels, improves lipid metabolism in mice test subjects, as well as reducing their subcutaneous (beneath the skin) fat.

  (Miele, 2012)

Fermented Soybean Extract (*Semen Sojae Praeparatum*)

10:1
10% Extractable Matter From Soybean
Contains 8.3% active substances in weight (8.3 g per 100 g).

- The fermentation of foods has been important in human life for centuries.
- In soybeans, fermentation increases certain bioactivities that enhance one's health.
- An important component in Traditional Chinese Medicine (TCM).
- Many researchers have focused on the active compounds which actions are increased after fermentation:
    - Antioxidative activity.
    - Blood sugar balancing (anti-α-glucosidase) effects.
    - Anti-hypertensive effects.
    - Anti-proliferative activity.
- Active compounds include:
    - Isoflavones (a class of compounds with estrogen-like activity): daidzein, genistein, and glycitein.
    - Peptides (short strings of 2-50 amino acids that help form different protein molecules)
    - Oligosaccharides
    - Essential fatty acids
    - Aspartic acid (an amino acid used to build proteins)
    - Methylarginine (a derivative of the amino acid arginine)
    - Sorbitol (a sugar alcohol)

  (Chai, et. al., 2019)
- Because of the abundant amount of evidence that soy offers many health benefits, it has undergone rigorous investigations for over twenty-five years, with over two thousand peer reviewed, yearly published articles related to the prevention of chronic disease.
- There is some scientific evidence of isoflavones reducing the risk of coronary heart disease, and breast and prostate cancer.
- Isoflavones been shown to alleviate hot flashes.
- Some studies indicate that isoflavones may benefit renal (kidney) function, improve skin health, and alleviate depressive symptoms.
- Soybean isoflavones, also known as phytoestrogens, have a chemical structure similar to the estrogen hormone; however, concerns that soy may influence estrogen levels are based

primarily on animal studies, whereas human research has supported the safety and benefits of soy.

- Soy is low in carbohydrates, which is found to be advantageous for diabetes.
- Soybean carbohydrates consist of mostly stachyose, a beneficial oligosaccharide that travel to the colon and nourish the beneficial bifidobacteria.
- Soybeans contain various types of beneficial fatty acids, including saturated, monounsaturated and polyunsaturated fatty acids (PUFAs).
- Soy PUFAs include omega-6 linoleic acid, and α-linolenic acid and the essential omega-3 fatty acid.
- Soy contains vitamins and minerals, including potassium, which is important for water balance , and is a good source of calcium and iron.
- Although soy contains phyate and oxalate, compounds known to inhibit mineral absorption, its calcium is actually absorbed quite well due to soy flavones are almost all glycosides, which actions are able to increase mineral absorption, which contributes to bone health.
- A comprehensive, multi-year investigation of the vast amount of scientific literature on soy's estrogen-like properties concluded that isoflavones do not adversely affect the breast, thyroid and uterus, nor increase the risk of breast of endometrial cancer.
- Investigations concluded and clinical examples show that isoflavones should not be equated with the hormone estrogen.
- Has been found to have hypocholesterolemic (cholesterol-lowering) effects since 1967.
- Has been found to help lower blood pressure (hypotensive).
- In two meta-analyses in 2011 and 2012, soybean isoflavones have been found to improve endothelium functioning in post-menopausal women with damaged endothelium (the membrane lining the heart and blood vessels), and who were at risk in developing coronary heart disease (narrowing of the arteries).
- A review of five studies helped conclude that isoflavones reduce arterial stiffness.
- Breast cancer incidence rates in soyfood consumption in various countries are lower than in Western countries; the Westernization of Asian countries has increased breast cancer rates.
- Investigations on countless studies concluded that neither soy or isoflavone intakes affect testosterone levels in men.
- Soy's genistein compound is found to have chemopreventive effects, and through homeostasis maintenance actions, counters cancer cell proliferation and promotes their destruction (apoptosis).
- In the two reported cases about alleged male feminization effects, both individuals were said to have consumed 360 mg/day, which is nine times greater than the average intake among older Japanese men.
- Numerous clinical studies found no negative effects on estrogen levels in men who consumed up to 150 mg of isoflavones per day; however, excess consumption of any food can potentially result in abnormalities.
- Another systematic review and meta-analysis of two different groups found no effects on male testosterone and other markers from soy protein or isoflavone intake.
- Concerns for adverse thyroid effects stem from *in vitro* (laboratory only tests) research, and studies where rodents received concentrations of isolated isoflavones.
- In 2006, another comprehensive review of the total evidence from fourteen clinical trials found that neither soy foods nor isoflavones had adverse effects on men or women with normally functioning thyroid glands.
- Current reviews show that isoflavone supplements do not affect thyroid function in post-menopausal women (Messina, 2016).

Ural licorice root extract (*Glycyrrhiza uralensis* Fisch.)

10:1

10% Extractable Matter From the Root

Contains 8.3% active substances in weight (8.3 g per 100 g).

- Also known as Chinese licorice and Gancao, *G. uralensis* Fisch. is commonly used in Traditional Chinese Medicine (TCM).
- Contains polysaccharides, found to have immunomodulation potential as anticancer agents (Ayeka, et. al., 2016)
- *G. uralensis* Fisch. contains licoricidin, a polyphenol, found to exhibit anti-carcinogenic properties:
    - Inhibitied the metastasic (the migration) of lung cancer *in vitro*.
    - Induced apoptosis and arrested cancer cell growth/proliferation.
    - Inhibited the migration of prostate cancer cells to other areas.
    - Induced apoptosis in mammary cancer cells *in vi*tro.
- Other researchers have shown the anti-inflammatory and anti-bacterial activities of licoricidin.
- *G. uralensis* Fisch. does not contain glycyrrhizin, which when chronically ingested, is known to elevate blood pressure (hypertension) and reduce blood potassium (hypokalemia), resulting in fatigue, muscle cramps and abnormal heart rhythms.
- *G. uralensis* Fisch. contains isoangustone A, shown to stop cancer cell development in *in vitro* (laboratory) cancer cell cultures (Park, et. al., 2016).

Catmint extract (*Schizonepeta tenuifolia briq.*)

10:1
10% Extractable Matter From the Herb
Contains 6.7% active substances in weight (6.7 g per 100 g).

- Used in China, Japan, Korea and Taiwan for thousands of years, and currently applied clinically for a wide range of skin conditions such as allergic reactions, inflammation, infections, as well as for the common cold, headaches, and fever.
- Known in China as “Jing Jie”.
- A team of researchers who studied *S. tenuifolia* Briq. found it to have immunomodulatory (immune regulating) actions associated with the role mast cells play in allergic skin and respiratory problems, such as urticaria (hives), dermatitis, eczema, pruritus (itching), allergic rhinitis, and asthma (Lin, et. al., 2018).
- Was shown to have antiviral activity both *in vitro* and *in vivo*, inhibiting the synthesis of EV71 viral RNA and its associated targeted actions that otherwise allow the virus to replicate.

(Chen, et. al., 2017)

- Another study examined the plant’s extract and determined it has antiplatelet and antithrombotic properties, making it a candidate for platelet-related cardiovascular conditions.

  Platelets are the clumping of small protein fragments known as fibrin that form on injured or damaged blood vessels. Over activity of this action results in blockages that impair blood flow within blood vessels, and leads to hardened (atherosclerotic) plaques. Such blockages can lead to stroke or myocardial infarction (heart attack) if the clots or plaques break loose, known as emboli (Jeon, et. al., 2019).

Reed rhizome extract (*Rhaponticum carthamoides*)

10:1
10% Extractable Matter From the Rhizome (Offshoot of root)
Contains 6.7% active substances in weight (6.7 g per 100 g).

- Commonly called maral root or Russian leuzea.
- Used for centuries in eastern areas of Russia.
- A review of one hundred seventeen literary sources, many of which were not published originally in English but in Russian, conveyed this plant's traditional uses, its chemistry and its biological effects.
- R. carthamoides have been found to contain various groups of natural plant steroids, polyacetylenes, sesquiterpene lactones, triterpenoid glycosides and terpenes (essential oil) containing a broad spectrum of beneficial effects on the brain, blood, cardiovascular and nervous systems, as well as various physiological functions such as proteosynthesis, work capacity, reproduction and sexual function.
- Antioxidant, immunomodulatory, anticarcinogenic, antimicrobial, antiparasitic, and insect repellent actions (Kokoska, 2009).
- Has strength building and adaptogenic properties; has been used by elite Soviet and Russian athletes for promoting muscle growth.
- Used in dietary supplements for improving the body's resistance to stress, fatigue and trauma.
- Various classes of phytosteroid compounds have been found in *R. carthamoides*; the class of ecdysteroid compounds enhance protein synthesis (building of new proteins), and lipid (fat) and carbohydrate metabolism (Roumanille, et. al., 2020)
- Contains phenolics – a class of plant compounds shown to inhibit the initiation and progression of cancers in vitro by modulating various free radicals such a reactive oxygen species (ROS) (Anantharaju, 2016).

Bamboo Leaf Extract (*Lophatherum gracile*)

10:1

10% Extractable Matter From the Leaf

Contains 6.7% active substances in weight (6.7 g per 100 g).

- Widely used in southern China; known as Dan Zhu Ye.
- Used in Traditional Chinese Medicine for cough, fever, lung heat and urinary tract inflammation.
- Leaf extracts have been shown to have antipyretic (prevents fever), anti-tumor, antibacterial, diuretic, and hyperglycemic activities.
- In one study, *L. gracile* demonstrated its ability to inhibit RSV, respiratory syncytial virus, and reduced inflammatory conditions both *in vivo* and *in vitro* (Chen, et. al., 2019),
- New antioxidant flavone compounds have been discovered in the leaves of *L. gracile,* and were tested for their in vitro antiviral activity against RSV
    - C-glycosides
    - Luteolin 6-C-α-L-arabinopyranosyl-7-O-β-D-glucopyranoside
    - Apigenin 6-C-β-D-galactopyranosiduronic acid (1 → 2)-α-L-arabinopyranoside
    - Luteolin 6-C-β-D-galactopyranosiduronic acid (1 → 2)-α-L-arabinopyranoside
    - Luteolin 6-C-β-D-glucopyranosiduronic acid (1 → 2)-α-L-arabinofuranoside
- Contains anti-viral flavonoids: isoorientin, isovitexin, vitexin, swertiajaponin, tricins, flavone c-glycosides, swertisin, orientin, lutonarin (Wang, et. al., 2012).
- Chemical constituents also include other very beneficial compounds: Arundoin; b-sitosterol; campesterol; cylindrin; friedelin; isorientin; isovitexin; orientin; stigmasterol; taraxasterol; vitexin.
- In TCM, the leaves are considered to be sweet, bland and cold, and address the heart, small intestine and stomach meridians.
- Leaves are also used for mouth sores, swollen gums, and pharyngitis.
- A leaf concoction is applied for urinary tract infections while relieving associated inflammatory conditions: hematuria, liguria, dysuria and strangury.
- Has inhibitory effects on illness causing bacteria: *Staphylococcus aureus, Streptococcus haemolyticus, Pseudomonas aeruginosa* and *Escherichia coli* (Glob, 2018).

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