ADAPTOGEN HERBS

(for Strength, Stamina and Stress)

American Ginseng Schisandra Ashwagandha Rhodiola Astragalus
Devil's Club Herb Robert Holy (Sacred) Basil

Other: Licorice root, Asian Ginseng, Siberian Ginseng, Amla, Cordyceps, Dang Shen, Eleutherococcus, Guduchi, He shou wu, Jiaogulan, Lycium berry, Prince seng, Reishi mushroom, Rhaponticum, Shatavari, Shilajit, Leuzea, Chaga (Birch Fungus), Aralia Mandshurica

Adaptogens are safe, gentle herbs capable of restoring normal tone and function of the Hypothalamic/pituitary/ adrenal axis and sympatho-adrenal system, and therefore to the entire body. Adaptogens help the body to cope with non-specific, chronic stress, the type we commonly associate with modern life. Among these modern stressors are environmental pollution in the form of reduced air, water and food quality, chemical exposure and noise pollution, work and even the mental burden caused by the overabundance of information provided by the media.

Chronic stress has a number of negative health effects including exhaustion, depression and impaired immunity. The effects of chronic stress are rather insidious, gradually weakening us at a foundational level, increasing our susceptibility and decreasing our vitality. Adaptogens are considered safe agents that normalize endocrine function through numerous broad and non-specific actions, and increase overall resistance to stressors. Because of this rather vague description, the term 'adaptogen' has not been widely adopted in mainstream Western medicine. Nevertheless, adaptogenic herbs posses some unique actions on the adrenal system that tend to promote resistance to the negative effects of stress on the body.

It could be said that Adaptogenic herbs strengthen the body's immune response and increase ability to cope with physical and mental stress. They are also used to increase overall vitality, having a normalizing influence on the body.

Adaptogens are generally not used to treat specific ailments, but used for long term to help person achieve more healthful state. Adaptogens should be non-toxic and have minimal side effects. Bryonia root may have adaptogenic properties but because the herb is potentially toxic, it is not included as an adaptogen, however it is widely used as a homeopathic remedy.

Adaptogens benefit people who constantly suffer minor ailments such as colds. They also greatly benefit those struggling with chronic ailments such as autoimmune disease. Because they help the individual cope with physical and mental stress, they are highly useful in people who feel tired, run down, stressed, burned-out and ill.

Few studies have tested the traditional uses of adaptogens. Most of the research focuses on isolated properties of these herbs in animals and in vitro, there are some clinical studies but is usually published in Asian or Slavic languages.

One theory is that adaptogens act by stimulating a person's nonspecific stress response through the hypothalamic-pituitary-adrenal axis. This axis acts to increase cortisol when animals and humans are subjected to stress, with a reduced sensitivity to feedback down-regulation and a disruption in the ciricadian rhythm of cortisol secretion. Central nervous system changes include a stress induced depletion of catecholamine neurotransmitters (norepinephrine and dopamine) and an acute increase in beta endorphin levels. Recent studies indicate increase in response to physical stress such as illnesses like cancer as well as emotional stress.

Be careful when you use these in combination with medicines. Because they may actually heal parts of the body, it may be that you are actually taking too high a dose of the medicine.

Licorice if taken for longer periods of time can start altering the corticosteroids in the body and can also alter potassium levels in the body and these could cause interactions with cardiac glycosides via the potassium. Licorice potentiates the effects of corticosteroids so if someone is taking steroid medications and say they have been tapered down to a lower dose (which the doctors want to do in order to take them off the steroids) - and they start taking licorice can take a 5 ml dose and turn it into a 10-20 ml dose, increasing the effect of burning out the adrenal glands. If taking insulin, licorice might alter that. Licorice may also interact with MAO Inhibitors.

Many herbs can have adaptogenic or tonic properties but not to be true adaptogens. Because adaptogens increase adaptive energy, they can be considered to be tonics according to the definition that tonics are substances that alleviate conditions of weakness within the body. Tonic herbs are important in Chinese medicine, in which their main function is to supplement deficiencies and enhance energy and well-being. A tonic can be taken every day usually with no side effects. One theory says that adaptogens function primarily due to their antioxidant and free radical scavenging effects. Although this theory is partially accurate, it doesn't explain the full effects of these medicinals. So, although adaptogens are antioxidants, having antioxidant properties (as do green tea, rosemary and bilberry) is not enough to make a substance an adaptogen.

Adaptogens also may have amphoteric effects. An amphoteric is a substance that normalizes functions of an organ or system within the body. Think of amphoterics as 'health food for an organ". Examples would be hawthorn for the cardiovascular or fresh milky oat for the nervous system - they are amphoterics, but not adaptogens. Adaptogens act as broad-spectrum amphoterics to living organisms, but rarely have a pronounced effect on only one specific organ or system. The concept of 'one drug for one disease' does not apply in the use of adaptogens.

Interestingly, adaptogens have adapted to their growing environments, including high altitude cold weather and other stressful conditions. They adapt well. Some are found in rugged mountain regions, many are native to China, India, Korea and Russia.



Canadian Ginseng





Schizandra





Ashwagandha



Rhodiola





Astragalus



Holy Basil



Herb Robert



Devil's Club

GINSENG, American

Botanical name: Panax quinequefolium

Pharmaceutical family: Araliaceae(Ginseng)

Synonyms: American Ginseng, Five fingers, Tartar root, Cherokee root, Red berry, Sang, Jinshard, Garantogen, Ninsin, Manroot, Xi yang shen

Part Used: root

History:

American ginseng has been long sough after. At the turn of the century (1900), Chinese sea ports received over 400,000 pounds of dried roots from the North American continent.

Outstanding in this Tartar root from the Chinese perspective is its ability to enhance the Yin and esp. lung Yin, where deficiency heat, irritation, dry coughing, insomnia etc. present. For this reason, American ginseng is classed among the Yin tonics in Chinese pharmacopoeias, unlike Chinese and Korean ginseng which are put under Yang tonics. Modern investigation has in fact revealed a far higher proportion of both glycosides and adaptogens in the Oriental varieties (the Japanese ginseng excepted which is closer to the American one) in support of this differentiation.

With its adaptogenic qualities which enhance long-term immunity and reduce stress induced damage by influencing higher nerve centers, and with its restoring and adjusting influence over gastric, hepatic and renal metabolic events (among many other things) there is not an inkling of dout that American ginseng is one of the best Qi tonics in existence.

From the energetic approach, its sweet bitter taste qualities fully substantiate this. The reluctance of Chinese medicine to recognize it as such has perhaps more than a little to do with cultural and philosophical considerations. This should not deter us from using it as a Qi tonic, as we would use acupuncture points CV6 & 12, St 36 and Bl 24 & 38.

Constituents:

saponin glycosides ginenodide & panaxoside, ess. oil 3%., camphoraceaous substance, resin, arabinose, mucilage, starch, glucose, panaxin, panacic acid, panaquilin, panacen, ginsenin, sapogenin, trace minerals.

Therapeutics:

Primary: a bit bitter and sweet, neutral, dry
Secondary: restoring, relaxing.
Lungs, stomach, intestines, adrenals, nerves
Air organism
Lung, Spleen meridians

Actions: .

* tonic and a panacea
* increases qi and replenishes deficiency; enhances immune potential and generates strength
* restores the lungs, stomach/spleen, liver and adrenals, and awakens the appetite
* restores and relaxes the nerve, benefits the brain and induces rest
* fosters the yin and clears deficiency heat

Pharmacology:

Antioxidant and immuno-enhancing properties.
Cardioprotective
Not as stimulating as Asian ginseng
Appears to affect all body
Effects are gentle, appearing gradually but acting deeply, going to root causes and helping eliminate them.

Indications:

1. -Qi deficiency with fatigue, weakness
   -Lung qi deficiency with shallow or difficult breathing, dry cough
   -Adrenal insufficiency
   -Liver and stomach qi deficiency with slow painful digestion, no appetite
   - debility due to chronic illness, childbirth, constitution
2. - Nerve deficiency with weakness, dull thinking, unrest
   - Cerebral anemia
   - Heart blood & Spleen Qi deficiency with palpitations, insomnia, poor appetite
   - Insomnia, unrest, nervous exhaustion
   - Rheumatism, gout
3. - Lung Yin deficiency with low afternoon fever, voice loss
   - Lung TB in initial stages
   - Lung irritation due to cold.

Uses:

* used in serious illness with other remedies failed by many Native American tribes.
* has shown hypoglycemic action of type 2 diabetes as well as beneficial effects on lipid status.
* used on Cold FX for upper respiratory tract infections in healthy adults
* combined with Gingko reduces hyperactive impulses and social problems in children with ADHD
* may be helpful in parkinsons
* gives strength to men and women in middle age (40-65).
*helps people handle midlife stressors like teenage children, elderly parents, career demands etc.
* has been used for menopausal women and women with breast cancer; appears to cool hot flashes and support chemo drugs

Contraindications:

Not if on blood thinners.
Not if pregnant - no studies done yet.

Toxicity: none known

Dosage:

American ginseng is best DECOCTED or TINCTURED. With occasional breaks of several days, it may be used continuously for maintenance in Qi deficiency and Yin deficiency prone.
Take after meals, not at bedtime.
Take three times daily
Dried root: 3-5g in infusion or decoction
Tincture: (1:5 25% ethanol) 3-5 ml 3 times a day.
Tea: Orientals have a long history of taking ginseng in tea form.
Duration of Use: continuously with occasional breaks of several days

the following is taken from Botanical.com:

American Ginseng Root Profile

Also known as- *Panax quinquefolius*, American Ginseng, Anchi Ginseng, Canadian Ginseng, Ginseng, Ginseng Root, North American Ginseng, Occidental Ginseng, Ontario Ginseng, Panax quinquefolium, Red Berry, Ren Shen, Sang, Shang, Wisconsin Ginseng, Xi Yang Shen.

Introduction

There are actually three different herbs commonly called ginseng: Asian or Korean ginseng (Panax ginseng), American ginseng (Panax quinquefolius), and Siberian "ginseng" (Eleutherococcus senticosus), the latter herb having many of the same effects as the first two even though it is in a different plant family.

Constituents

Acetic acid, adenine, adenosine, alanine, ascorbic acid, benzoic acid, beta-sitosterol, caryophyllene, cysteine, ferulic acid, folic acid, at least 10 different ginsenosides, glycine, guanidine, histidine, Isoleucine, kaempferol, magnesium, malic acid, niacin, pantothenic acid, salicylic acid, tannins, tyrosine, vanadium, zinc.

Parts Used: The mature root, washed, dried and cut.

Typical Preparations: Teas, extracts, or in capsules

Summary

American ginseng is a different remedy than the panax ginseng and neither should be substituted for the other. It is especially helpful for males engaged in weight control. A study published in 2005 in the Journal of the American College of Nutrition noted that men who take at least 3 grams of American ginseng per day experience lower blood sugars and lower insulin levels after eating. Lower levels of insulin lead to a lesser tendency to store food as fat. Weight lost by diet and exercise is more likely to stay off when men use American ginseng.

Women are more likely to use American ginseng to control undesirable symptoms of menopause. For this application, more is better. A full daily dose of American ginseng provides many of the same symptomatic benefits as estrogen replacement therapy, and laboratory research suggests that the herb provides chemicals that "lock" estrogen receptors and possibly prevent estrogen-stimulation of breast cancer.

Both men and women with diabetes benefit from American ginseng at a relatively high dose, at least 3 grams a day. Clinical study has found that the herb prevents post-prandial hyperglycemia, the sudden spike in blood sugars after a meal.

Precautions

Most herbalists recommend taking American ginseng (or any other ginseng) for a month at a time, followed by a two-week "rest."

CANADIAN GINSENG

Botanical name: Panax quijquefolius)

Pharmaceutical family: Araliaceae(Ginseng)





Panax quinquefolius is American Ginseng, now being grown in Canada.
4 year old roots are selling $120 - $300 a pound
Apparently the Chinese are really excited about our ginseng. How much wild is left is uncertain, but growing farms are starting up, especially in Ontario. Crops are expanding to the the prairies and British Columbia's Okanagan.

The internet has information on growing ginseng in greenhouses, pots,

Typically seven years is needed for a high quality root, but we see 4 year old roots being sold on the Canadian Market. Apparently the Chinese are preferring the ginseng grown in Canada.

The Canadian Ginseng also boasts to:

- **For Stress:**
  helps the body withstand mental and physical stress
  a stress tonic
- **For the Immune System**
  boosts the immune system
  functions as an antioxidant
- **For Inflammation**
- **For Infections:**
  for colds and flus
  HIV and AIDS and insulin resistance related to those
  Intestinal dysentery
  Pseudomonas that affect cystic fibrosis
- **For Digestion:**
  improves digestion
  helps for loss of appetite
  vomiting
  colitis
  gastritis
- **For anemia (low iron), diabetes, cancer fatigue, high blood pressure, insomnia, nerve pain, erectile dysfunction, fever, ADHD, blood and bleeding disorders, breast cancer, dizziness, headaches, convulsions, fibromyalgia, memory loss, hardening of the arteries, rheum. Arthritis, schizophrenia, mental performance to the aged, menopause symptoms, nervous exhaustion.**

SCHIZANDRA

(Botanical name: Fructus Schisandrae)

Pharmaceutical family: Araliaceae(Ginseng)



Common Names/Synonyms: Schisandra chinensis, Schizandra sphenanthera, Schisandra fruit, Wu Wei Zi, Magnolia Vine, O Mi Cha. Japanese name is gomishi. Korean: omija.

Parts Used: berries

Found: This herb is commonly used in Russia where the first studies were conducted in the 1950's, as well as North America and throughout the world. It is native to Siberia and northern regions of Russia, Korean peninsula and northeast region of China.
It is a Zone 5-9 deciduous woody vine. If you provide an protected area, it is possible to grow it here. A nursery in B.C. may have some small plants: http://www.twiningvinegarden.com/?twiningvine/index.php

ID: Woody vine that produces unique berries. We Wei Zi means 'five flavor berry' because berries are said to contain all 5 types of taste: bitter, sweet, salty, sour, spicy.

Collection: Ripe fruit gathered in autumn, dried in the sun

History: One of the 50 top herbs used in China Years ago used by hunters when travelling in China to give them strength.

Constituents:

Astaxanthin is the pink carotenoid that gives salmon, crabs, shrimp and flamingos their color. This is because these animals eat microorganism that contain large quantities of astaxanthin. Like other carotenoids, astaxanthin protects cell membranes, which are primarily made up of fats.
Active mechanisms include gamma-schizandrin plus valuable lignans originating from miniature red berries of citrus fragrance providing biologically-active ingredients and microbiotic elements for immuno-modulating purposes. Also referred to as Wu Wei Zi due to its inherent multiple taste sensations with attributes of salty, hot tasting, sour, sweet, and bitter it's additionally known as the herb of five flavors. The Fructus schizandrae consists of essential oils with no known toxicity. Numerous species exist including the rubrifolia and glaucescens variety

QUALITIES:

Taste: sour and warm
Meridian: lung, kidney and heart

Therapeutics:

- Adaptogenic (helps body adapt to stress)
- To astringe lungs, nourish kidneys
- Promote production of body fluids, astringe sweat
- Restrain essence and stop diarrhea
- Calm heart and soothe mind.

Pharmacology/Actions:

Berries are considered balanced and tonic in Traditional Chinese Medicine. Similar to Astragalus, a tonic with building properties and supportive to elimination . Helps body handle stress. an antioxidant with liver supportive properties. Supports function of liver's metabolic enzyme pathways including hepatic glutathione, cytochrome P-450, and protein synthesis, transaminase, total bilrubin and total cholesterol.

Indications:

- **Chronic cough and asthma, often caused by deficiency of lungs and kidneys. Scanty sputum, asthma aggravated by slight exertion. Often used in combination with other herbs**
- **For deficiency of energy and body fluids manifested as spontaneous sweating, night sweats, thirst, palpitations, short of breath, weak pulse of no force.**
- **For diabetes manifesting as thirst, excessive fluid intake, short of breath. Use with astragalus, rehmannia, and other herbs**
- **For nocturnal emissions, seminal emissions caused by deficiency of kidneys.**
- **Chronic diarrhea caused by deficiency of spleen and kidneys**
- **Deficient yin and blood to heart and kidneys resulting in palpitations, irritable, insomnia, dreamful sleep, forgetfulness.**
- **Used for helping mental function, stress.**
- **Tonic, restoring tone to tissue**
- **Expectorant, clearing lung mucus and reducing cough.**
- **Speeds nervous responses for quicker and stronger reflexes.**
- **Nervous Exhaustion**

Dosage: (daily)

1-3 grams up to twice daily

Preparation: **Chinese herb.**

CAUTION:

Average doses considered safe and nontoxic.
Mild side effects may include indigestion and skin rash.
Do not use in early stage of cough or rubella measles and in excessive internal heat with unrelieved exterior syndrome.
May promote contractions of uterine muscles so don't use if pregnant.

ASHWAGANDHA

(Botanical name: Withania somnifera, Physalis flexuosa)

Pharmaceutical family: Solanaceae (nightshade) family





Common Names/Synonyms: Winter Cherry, India ginseng, Withania, Asgandha, Indian Winter Cherry. Literal meaning is "the sweat of the horse, the herb bestowing the power of horse". Horse is a symbol of physical prowess and sexual power. In Sanskrit means 'horse's smell".

Other names: Achuvagandi Amikkira-gadday Amkulang-kalang Amukkira-kilzhangu Amukran-kizhangu Asundha Hirre-gadday Hirimaddina-gadday Peneeroo-gadda Sogade-beru Pevette Ajagandha Samm Al Ferakh Kanaje Hindi

Parts Used: root, used mostly as powder and decoction. Leaves

Found: India, Nepal, Pakistan, Sri Lanka, Bangladesh. Commercially cultivated in Madhya Pradesh, a state in India.

ID: Stout Shrub, reaches 5'6". Like the tomato which belongs to the same family, it bears yellow flowers and red fruit, though its fruit is berry-like in size and shape.

Growing: An evergreen woody perennial shrub, native to hot and dry tropics as in India, Pakistan, Sri Lanka, Africa. It is a tender perennial and can be grown as an annual in climates with cold winters such as ours. Start the plants from seeds and you can get roots in only one growing season. Start early in spring after frost indoors as you would tomato plants. It can grow 3 feet tall, 2 feet wide in one season, produces small light green flowers which form into reddish orange berries concealed inside transparent paper coverings. Give it full sun, average soil, good drainage. You should get good roots by October.

History: This is one of the most important Ayurvedic herbs.

Constituents:

Alkaloids: about 13 alkaloids are known as Isopelletierine, anaferine, cuceohygrine, anahygrine, tropine
Somniferin: bitter alkaloid with some hypnotic activity
Steroidal lactones: withanolides, withanoferins
Saponins: these are with an additional acyl group (sitoindoside VII and VIII)
Withanolides with Carbon at 27th position: sitoindoside IX and X.
Iron.
Other: resin, fat, colouring matters, reducing sugar, phytosterol, Ipuranol, mixture of saturated and unsaturated acts.

Aswaghanda **2.**

QUALITIES:

Taste: **Strong, hot/ Bitter, pungent and sweet. (sweet in vipaka or post metabolic flavor which is the property of this herb that makes it valuable as a rejuvenative and tonic herb with nutrient value to tissues.**

Odor: **like a sweaty horse**

Energy: Hot

Therapeutics:

- **If facing constant stress and chronic fatigue.**
- **For anxiety, relieving stress.**
- **Improving immune system, increases muscle mass**
- **For ulcers**
- **Greater libido, higher red blood cell counts.**
- **Helps liver function.**

Pharmacology/Actions:

Adaptogen

In rats, have shown to regress cancer tumors.

Powerful anti-anxiety agent, helping the feeling of heart attack (rapid heart beat, elevated blood pressure)

Stimulation of cytotoxic T lymphocytes.

Indications:

- **Used to lower cortisol levels and balance thyroid hormones**
- **In India is similar to Ginseng in other parts of the Orient. Both herbs are touted for their longevity enhancing and sexually stimulating properties however Ashwagandha is considered milder and less stimulating than Ginseng.**
- **Has been used for 4,000 years in traditional Indian medicine for tumors, inflammation (incl. arthritis) and infectious diseases.**
- **In Africa it is used for fevers and inflammation.**
- **Said to increase body's ability to withstand stress of all times. Improves physical energy, exercise capacity and overall health.**
- **Strengthens immunity (against colds, flu and other infections).**
- **Increases sexual capacity, improved fertility, normalizes cholesterol levels.**
- **Sometimes said to produce mild sedation (an effect potentially use for those troubled by insomnia or anxiety) - only preliminary studies on this as yet.**
- **Research continues using the leaves as cancer treatment., esp. tumor cells.**

Dosage: (daily)

Fluid extract of root: 250-500 mg (5:1)
200-300 mg (10:1)
2-3 times daily

Root Powder: 2-5 gm or 1/2 - 1 teaspoonful

Leaves powder: " "

Capsules: 1 cap 2-3 times a day (each cap 500 mg 5:1) equivalent to 2.5 gm crude product.

Take Ashwagandha with milk or water or fruit juice. Milk is indicated for debilitated, weak persons or those with lower than normal body weight. Water or fruit juice is good for obese and overweight individuals.

Preparation:

In Ayurveda it is considered a rasayana herb(used to promote physical and mental wellbeing). Also an adaptogen which works to normalize physiological function, working on the HPA axis and neuroendocrine system. In Ayurveda the fresh roots are sometimes boiled in milk prior to drying in order to leach out undesirable constituents. The berries are used as a substitute for rennet to coagulate milk in cheese making.

RHODIOLA

(Botanical name: Rhodiola rosea)

Pharmaceutical family: Crassulaceae (Stonecrop)



Common Names/Synonyms: **Golden root, Roseroot, Aaron's Rod, Roseroot. Rosenrot.**

Parts Used: **root**

Found: **Arctic, Central Asia, Rocky Mountains, Mountains of Europe, Great Pyrenees, Carpathian Mountains, Scandinavia, Iceland, Great Britain. Perennial, grows in areas up to 2280 meters elevation.**

ID: **Has separate male and female parts.**

Growing: **High elevations, cold. At least 75 acres in Alberta are in growth stages, making it a leading supplier in the world. It is perennial, grows up to 45 cm high. It takes 3-4 years to grow to proper size for harvest. The power produced from the roots can be used as a tincture or ground up and used as caps.**

History: **Widespread use in northern regions where it thrives. Used for memory, decreasing fatigue, treating mild to moderate depression, enhancing athletic performance.**

Long history of use as traditional medicine in Northern Europe and Asia. After discovering rhodiola in Iceland, the Bikings used the root to give them extra strength during their long and physically challenging journeys at sea. Himalyan monks still use.

In Russia and Scandinavia, Rhodiola rosea, also known as golden root, has been used for centuries to cope with the cold Siberian climate and stressful life.[citation needed] Such effects were provided evidence in laboratory models of stress using the nematode, C. elegans, and in rats in which Rhodiola effectively prevented stress-induced changes in appetite, physical activity, weight gain and the estrus cycle.

Constituents:

The dried rhizomes contained essential oil with the main chemical classes: monoterpene hydrocarbons, monoterpene alcohols and straight chain aliphatic alcohols were the most abundant volatiles detected in the essential oil, and a total of 86 compounds were identified (Rohloff, 2002). Geraniol was identified as the most important rose-like odor compound besides geranyl formate, geranyl acetate, benzyl alcohol and phenylethyl alcohol. Its oxygenated metabolite Rosiridol is an aglycon of Rosiridin (Kurkin et al., 1985a; Kurkin and Zapesochnaya, 1986b) - one of the most active constituents of Rhodiola in bioassay guided fractionation of Rhodiolathe extract (van Diermen, 2009). Rosiridin was found to inhibit monoamine oxidases A and B in vitro implying its potential beneficial effect in depression and senile dementia (van Diermen, 2009). More than 50 polar compounds were isolated from the water alcoholic extracts, they are: monoterpene alcohols and their glycosides, cyanogenic glycosides, phyhylethanoids and phenylpropanoids, flavonoids, aryl glycosides, proanthocyanidins and other gallic acid derivatives.

Compounds include class of rosavins which include rosavin, rosarin, and rosin. Most active components are likely to be rhodioloside and tyrosol. Other components being inactive when administered alone but show synergistic effects when a fixed combination of rhodioloside, roosavin, rosarin and rosin was used. Although rosavin, rosarin, rosin and salidroside (and sometimmes tyrosol rhodioniside, rhodiolin and rosiridin), are among suspected active ingredients of Rhodiola rosea, these compounds are mostly polyphenols for which no physiological effect in humans is proved to prevent or reduce risk of disease. Although these phytochemicals are typically mentioned as specific to Rhodiola extracts, there are many other constituent phenolic antioxidants including proanthocyanidins, quercetin, gallic acid, cholorgenic acid and kaempherol.

Areas affected:
Neurotransmission, brain

Therapeutics:
Depression Fatigue Stress Improves mental performance

Pharmacology/Actions:
Optimizes serotonin and dopamine levels due to monoamine oxidase inhibition and its influence. Research shows rhodiola's restorative action is due to its positive influence on biogenic neurotransmitters, incl. norepinephrine, dopamine, serotonin, and acetylcholine. Taken internally, rhodiola inhibits the breakdown of these important brain chemicals and increases their bioavailability, resulting in a greater sense of well-being and enabling the body to better adapt when stress occurs. Herbs that work this way are called adaptogens. Rhodiola root possesses the ability to prevent the damaging effects of stress even in acute situations.
This protective action is useful for athletes, taken just before a marathon or cycling competition, it may help in the recovery from physical demands made on the body.

Indications:
- **Cardio stress: protects against stress induced damage and helps to stabilize heartbeat, thereby decreasing arrhythmias, indicating rhodiola's use as a cardiovascular tonic.**
- **Memory, Fatigue, Motivation**
- **Anxiety and Depression for mid to moderate cases.**
- **Insomnia**
- **Short term memory problems, trouble concentration, calculations**

Dosage: (daily)
Dried root: 1 tsp (5ml) TID
Capsules: 200-600 mg daily, standardized to contain 3% rosavins and 1% salidroside.
Tincture: 5 ml 2-3 X/day
Most studies used extracts standarized to contain a minimum of 3% rosavins and up to 1% salidroside as this is the natural ratio in the root.

ASTRAGALUS

(Botanical name: Astragalus Membranaceus)

Pharmaceutical family: Fabaceae (Pea)





Common Names/Synonyms: **Milk Vetch, Huang Qi(Chinese), Astragali, Beg Kei, Bei Qi, Buck Qi, Gwanggi, Membranous Milk Vetch, Mongolian Milk, Ogi(Japan), Astragalus mongholicus, Yellow Leader, Milk Vetch root, Tragacanth, Gum Dragon, Canada Milk Vetch, Slender Milk Vetch, Standing Mlk Vetch, Hwanggi(Korean). Goats horm, goat's thorn, Green dragon, Locoweed.**

Astragalus trigonus, Astragalus gummifera, Astragalus mollissimus, Astragalus lentiginosus.

Parts Used: **Root.**

Found: **Native to China and Mongolia.**

ID: **A herbaceous perennial, can grow up to 4 feet high. Graceful, flowing plant with long stems bearing paired, pointed leaves and purple flowers.**

Growing. **Plant seeds in a small pots or seed tray that are at least 2 inches deep. Use good quality seed starting mix or make it yourself. Plant seeds an inch deep and water the soil slowly. Keep the soil evenly moist but not damp until germination occurs. Seeds need a 21 day cold period of stratification to promote germination. You can begin the stratification mid to late winter, then start the seeds indoors, transplanting outdoors after the first frost in early spring. Before sowing seeds, soak in water for an hour to soften and tamp lightly in to the soil, or cover with a thin layer (1/8-1/4" deep).**

When transplanting, space plants approximately 15" apart. *Astragalus grown* from seed requires at least two years of growth to produce rootstock of adequate size for medicine making. Harvested roots when white, dig out of grown, they will become yellow as they are dried.

Constituents:

Polysaccharides (glucans), saponins) astragalosides, flavonoids, phytosterols.

The triterpenoid sapponins, known as astragalosides support integrity of mucous membranes and epithelial cells in respiratory tract through an antioxidant mechanism.

Polysaccharides support immune.

Astragalosides; .3% 5% 5% HPLC

Polysaccharides 40%, 50% UV

Areas affected: **Spleen** **Lungs**

QUALITIES:

Taste: Sweet

Energy: Nourishing, Warm

Meridian:

Therapeutics:

Stimulates deep immunity, best for immune deficiency where when you get sick easily or are prone to viral and bacterial infections. Will excite white blood cells, increase natural killer T-cell activity, interferon and other immune activity.

Increases number of stem cells in bone marrow and lymph tissue and encourages their development into active immune cells. Appears to trigger immune cells from a resting state into heightened activity.

Known for effect non-specific defenses like promoting macrophage and monocyte function and interferon activity.

Powder may be sprinkled on food, used in soups etc. Most recommend taking 9-15 grams (3-5 tablespoons of the whole herb a day.

Pharmacology/Actions:

Adaptogen, Immunostimulant. tonic

Indications:

- **Respiratory**
- **Weak immune system**
- **Take as herbal flu shot when flu season begins**
- **Support if doing chemotherapy**
- **Adjunctive cancer therapy, helping keep white blood cell counts normal, preventing infectionnos**
- **Chronic nephritis and diabetes**
- **Orally as antibacterial and antiviral.**
- **Tonic**
- **Liver protectant**
- **Anti-inflammatory**
- **Diuretic, vasodilator or hypotensive agent.. The vasodilator speeds healing.**

Other Uses:

Taken with Ligustrum licidum (glossy privet) it is used orally for treating breast, cervical and lung cancers.

Dosage: (daily)

Commonly used as strong decoction made from boiling dried root in water for extended period as in tea or soup. They recommend 3-5 tablespoons whole herb a day.

Fluid extract: 20-60 drops 2-3 times a day or as needed in juice or water.

Powder: May be sprinkled on food.

Administration:

Can be taken very long term (3-12 months)

Often taken with a variety of other herbs.

CAUTION:

Do not use when acute or sick.

Non toxic in any dosages.

HOLY BASIL

(Botanical name: Ocimum sanctum)

Pharmaceutical family: Lamiaceae (labiatae) (mint family)



Common Names/Synonyms: Sacred Basil, Ocimum tenuiflorum/Tulsi

Parts Used: Leaves, seeds

Found: India but can be grown locally here in the summertime.

ID: Member of the Mint Family.
Upright, 30-60 cm tall covered with soft hairs. Stems are square, leaves are opposite, elliptical-oblong with relatively long petioles and serrated leaf margins. Flowers appear in racemes arising in whorls on the terminal part of the stems and are labiate, bilaterally symmetrical and purplish in colour.

Growing: Indoor/ outdoor. Don't crop more than 30% to preserve strength of plant. Will not survive cold winters so saving seeds is necessary.

History: Considered a sacred plant by the hindus, dedicated to Krishna. Also known as holy basil in english and as tulsi or tulasi in Hindi. Grows wild in India, but can be cultivated in home and gardens.

Constituents: volatile oil consisting of about 70% eugenol as well as methyl eugenol and caryophyllene. Triterpenoid ursolic acid, rosmarinic acid, alkaloids, saponins, flavonoids including apigenin and luteolin and glycosides; phenylpropane glucosides and tannins. Seeds contain fixed oil containing five fatty acids incl. about 17% linolenic acid and 50% linoleic acid.

Areas affected: Nervous System, Brain

Therapeutics:

Stress - increased resistance for behavioral despair, induced gastric ulcers, exposure to hepatotoxins.. endocrine stress from noises.
Acute and chronic inflammation
Analgesic
Diabetes and hypoglycemia
Sold on the market as stress relief, anxiety relief.
Extracts in ayurvedic remedies: common colds, headaches, stomach disorders, inflammation,, heart disease, various forms of poisoning and malaria.
Essential oil from Karpoora Tulsi for medicine and in herbal cosmetics, skin preparations due to its anti-bacterial activity.
Tulsi leaves mixed with stored grains to repel insects

Pharmacology/Actions:

Adaptogen
Antioxidant, anti-cancerogenic, immuno-modulatory, hypocholesterolaemic, hypoglycaemic.
Animals treated with extract withstand both physical and chemical stress of different kinds better.
Leaf extract shown to stimulate release of ACTH from pituitary cells in vtro.
Recent studies suggest Tulsi may be a COX-2 inhibitor like many modeern painkillers due to its high concentration of eugenol (1-hydroxy-2-methoxy-4-allylenzene).
One study showed tulsi to be effective treatment for diabetes by reducing blood glucose levels (due to antioxidant properties). Study showed significant reduction in total cholersterol levels

Shows promise for protection from radiation poisoning, cataracts.

Indications:

- **Stress, anxiety - increased resistance for behavioral despair, induced gastric ulcers, exposure to hepatotoxins.. endocrine stress from noises.**
- **Analgesic for Pain, Acute and chronic inflammation, Arthritis**
- **Fever**
- **Vomiting**
- **Bronchitis, Asthma**
- **Earache**
- **Diseases of heart and blood**
- **Diabetes and hypoglycemia**
- **Leaves taken with black pepper have been used for malaria. And a decotion of the root has been used for malarial fevers. Leaf juice has been used for chronic fever, hemorage, dysentery, dyspepsia and for ringworm and skin diseases.**

CAUTION:

none known

HERB ROBERT

(Botanical name: Geranium Robedianum)

Pharmaceutical family: Geraniaceae(geranium)





Common Names/Synonyms: **Herb Robertianum, St. Robert, Storkbill, Cranesbill, Wild Geranium, Red Robin, Fox geranium, St. Robert's Wort, Bloodwort, Felonwort, Dragon's blood, Stinking Bob, Crow's foot.**

Parts Used: leaves, root

Sister plant: **American cranesbill**

Found: **grows relatively rarely in open places; it is more likely to be found in shady broad-leaved forests on rocky places and in crevices, where at least a small, spongy, nitrogenous build-up of leaves has occurred. In Europe, British Isles, Mediterranean. Considered a noxious weed in the pacific northwest U.S.**

ID: **An annual but self-seeds. Can grow in cold climates or hot. Grows up to 14", stems branch in many directions, often turn red. Green leaves 2 1/2" long, form opposite, at knotted joints in the stem; leaves are palmate in shape, deeply cut, often tinged with colours of pink, red or bronze. Stems and leaves are covered with very fine hairs. Dainty bright pink 5/8" across flowers have 5 rounded petals. Each petal has 3 paler streaks, starting at center and moving out along the petal. flowers develop in groups of 2 or 4 at leaf axils. Following flowers, the base of the blossom quickly fills out and develops into the oval seed receptacle 3/4" long, when mature looks like a bird's beak, thus the common names: cranesbill.**

As seeds dry off, nature has a way of dispersing: by opening the beak and ejecting with a sudden spring action, flinging the 5 small oval seeds in five directions.

<u>Geranium Maculatum/Cranesbill Geranium</u>

Don't mistake this plant with Geranium maculatum which also has the common name of Cranesbill Root and Crowsfoot which is a perennial . Cranesbill Geranium is a perennial and also used medicinally.



Growing:

Propagation is by seed. Plants thrive in shady, moist, grows quickly, flowering profusely. Wide range of climates. Just don't let it dry out. Insects don't seem to like it.
Grow seeds in large pots, a shady spot in the garden or styrofoam fruit boxes are ideal, as they can accommodate a thick planting of seeds. Cover seed with 5mm of fine soil. Water regularly, so the soil does not dry out. Germination can take from 2-6 weeks, depending on temperature and climatic conditions. For people using the herb daily with raw egg-yolk, it is advisable to get 6-10 styrofoarn boxes of plants established, and also to maintain an ongoing regime of regular seed planting. It is the consistent, daily, use of the herb that is important to improved health.

If herb Robert is touched, its fragrance gives it away as a geranium (*Pelargonium*), a familiar group of house plants from South Africa. They emit a fragrance, especially upon being touched, which is intended to put potential predatory plant-eaters off their food. At least a certain percentage of people find the smell unpleasant. The smelly liquid that is acquired by boiling the plant is used in Finland to get rid of bugs and also to treat wounds.

History:

It is believed that the herb was probably named after the 11 th Century French saint Robert, Abbot of Molerne, whose medical skills were legendary. Herb Robert could also be called a true saint for the way it has helped and blessed so many people.

- **1976 article written by V. Ferrandix N.D. Spain in Herald of Health:**
  This healing is not a modern invention within the natural healing arts. The great botanist and teacher Dioscorides had already described it. Probably someone in Portugal had read about his description of the remedial action of Robert Wort against cancer and knowing about some cases of this terrible disease started to use this herb or recommend it to the patient's relatives. And so its healing virtues soon spread over the country, which attracted the attention of the media, who began to investigate and collect information from several sources.
- **In February 1953, the "Natura" magazine printed a letter by P. Friere, an outstanding Portuguese Journalist stating, "My colleague, Mr. Nunes de Carcalho, reports about his mother-in-law, aged 83 years. She had been afflicted with bowel cancer, confirmed by two doctors and x-rays. They advised that not one but two surgical interventions were deemed extremely essential, but, despite this, the poor old lady possibly would not stand the operation, at her age. Someone told Mr. De Carcalho about a person who knew about a prescription with which she used to cure this disease. The women prescribed a mixture of powdered leaves of St. Robert's Wort and fresh raw egg yolk. The patient took this and was healed". The plant has astringent, homeostatic and antibiotic action. Shortly after, the wife of the journalist fell ill, and the same doctor who advised the two operations for the old lady, attended her. It was at this time that the doctor discovered that the woman, whom he thought would have been dead, was healed. Then, more information was found about others who had been healed; some of cancer of the bowel; others of lung cancer, of breast cancer, and cancer of the uterus. Especially mentioned, was the case of a lady afflicted with intestinal cancer as diagnosed by x-rays and doctors, she was in her last stage of endurance as the wound was deep and large. Treated with this remedy, Herb Robertianum, in a few weeks and with some enemas, a total purification was accomplished. To this, the reporter added... it is usual for doctors to doubt their own diagnosis rather than accept that cancer has been cured by a humble herb. Another woman healed with this herb, was Anna Cruz Caridade, who had inoperable lung cancer, with branches leading to the neck and arms. She heard about the healing virtues of St. Robert's Wort and tried it. Very soon, an improvement ensued and, after a time, was completely healed. Some time later, lumps appeared in her breasts, rib and shoulder and her doctor advised a series of radiotherapy treatments. But she remembered what had happened with the lung cancer, and again, tried the same herbal treatment. Gradually, the nodes started to recede and diminish in size, till they were completely gone'.**
- **Isabell Shipard, herbalist writes: Adam called to tell me he had been diagnosed with advanced bowel cancer, and his doctor had told him to go away and die. He had been told about herb robert, and started taking the herb, daily. His cancer is now in remission."**
- **A lady, in Brisbane, was very sick with cancer, but was not told the full extent of her condition. She started on a regime of raw foods, herb robert and wheatgrass juice. Sometime later, the doctor admitted her to hospital and put her through many x-rays. Eventually, the doctor told her the reason for all the x-rays. Previous x-rays had shown extensive cancer of the spine and lymph nodes. The new x-rays showed not one sign of cancer. Lee said the doctor gave her 'a bit of unconventional advice... to continue with what you are doing'. Lee said she was using 3 teaspoons of herb robert with raw egg yolk, every morning.**

- **A lady with cancer of the mouth (she had been a smoker), who heard about herb robert from her sister, when she had traveled from Brisbane to join in a herb course. She started making the herb as an infusion: gargling the warm tea and then swallowing it. The specialist was baffled at her next visit. She now lives in full health."**
- **A lady with lumps in her breast. Someone had shared with her about herb robert and she had been taking the herb, for about 8 weeks. She said, "I don't know if it is coincidence, but the lumps are going'. Perhaps, it is a coincidence; perhaps, it is a miracle.**
- **A Lady attended a herb course for people at Kingaroy. Some time later, the lady was told by her vet, that aged dog with cancer should be put down. She chopped up a dozen leaves finely, mixed it with the dog food. The dog made a full recovery.**
- **Other reports of the herb diminishing or curing lumps and abscesses on dogs. Usually within 4-6 weeks.**
- **A woman from North Queensland, is enjoying a holiday on the Sunshine Coast, and a new lease of life. Her life had been marred by lung cancer, but now is free of any sign of it, which Mary believes was due, entirely, to taking herb robert daily, for eleven months, and she will continue to take it."**
- **Report the herb a skin cancer on a man's leg, with herb robert. Other reports of various skin cancers disappearing with the herb. And another claimed it cured the bladder cancer when they drank the herb.**

Areas Affected:

Digestion **Throat** **Blood** **Immune** **Adrenal** **Sexual**

Constituents:

Contains Tannins, a bitter principle: geraniin, traces of volatile oil, citric acid. Vit. A, B, and C as well as calcium, potassium, magnesium, iron, phosphorus, germanium, elagic acid.
Nutrition: Vitamins A, B, C
Minerals: calcium, potassium, magnesium, iron, phosphorus, germanium

USES:

- **enhancer of the immune system.**
- **A source of germanium, a valuable element to the body, as it has the ability to make oxygen available to the cells. More oxygen at cell level, means the body has the opportunity to fight disease by its own powers and healing can take place quickly. Lack of free oxygen available to the cells can be caused by free radicals and a toxic state around the cells meaning the cells cannot get the required oxygen or the nutrients to regenerate. The area becomes anaerobic, the beginning of pain, disease, wayward cells and cancer.**
- **Blood Cleanser**

Pharmacology

ADAPTOGEN	**Astringent**	**Antibiotic**	**Antiviral**
Styptic	**Tonic**	**Diuretic**	**Digestive**
Sedative	**Antioxidant**		

Indications:

- **Skin problems, wounds, bruises, infectious sores**
- **Cancers of all kinds**
- **DIGESTION: Stomatitis, stomach/peptic ulcers, other stomach problems, digestive aid, enteritis, diarrhea, gastritis, hemorrhoids, painful inflammation around finger and toe nails, Colitis (inflammation of colon)**
- **stones, herpes, colds, lethargy.**
- **Mouth Ulcers(gargle), Bleeding Gums, Sore Throats.**
- **Throat and mouth inflammation**
- **Diarrhea**
- **Inflammations of many types eg. uterus, painful inflammation around finger and toe nails, shingles, rheumatism and arthritis. Poultices have been employed in many cases**
- **Adrenal gland diseases**
- **Impotence**

- **Kidney diseases and stones, gout**
- **Liver ailments**
- **Eyewash for eye irritations**
- **Chronic fatigue is being relieved, for people who start on the herb.**
- **Wounds (astringent properties)**
- **As a foot infusion, said to help remove toxins, heavy metals and radiation from the body. Recommended for if subject to many x-rays, or people continually working in the fields of computers, mobile phones, and other electronics, giving off ELF and VLF radiation, infrared and microwave irradiation, and x-rays.**
- **For diabetes, to stabilize blood sugar levels**

Dosage: (daily)

2 tsp dried herb or 1 tsp dry root.

Preparation:

Rub bruised, fresh leaves over the area, or use the herb, made into a tea, as a mouth rinse and gargle.

To make a Foot Infusion: take a handful of chopped herb, place into a bowl (large enough to rest both feet in) pour 4-5 cups of boiling water over it and stir, vigorously. Then add cold water, to adjust to heat bearable to place feet in. Sit in a comfy chair with your feet in the bowl for 15 minutes, relax and read your favourite herb book. This is also excellent therapy for tired or aching feet.

For cancer treatment, the method of use was to take the leaves and stems of herb robert (either dried and powdered or finely chopped, fresh leaves) to make a heaped teaspoonful. This was mixed well with a fresh, raw egg-yolk, taken first thing in the morning, on an empty stomach. Don't be put off by the thought of the raw egg-yolk, as believe me, it is quite palatable. The finer the herb is cut the easier it is to swallow.

Approximately 20-25 large leaves and stems (10-1 5cm long) are required to make 1 teaspoonful of finely Chopped leaves. To keep up this daily dose, quite a number of plants need to be growing and well established to have sufficient leaves for a daily supply. For people who require a consistent, ongoing, supply of leaves, as plants flower and set seed, that these be handpicked. Seed is mature when the capsule is 2cm long, with the oval seed receptacle being plump and hard, when felt with 2 fingers. Nip off the hard capsules and leave to dry 3-4 days.

For external use, the juice from crushed leaves is rubbed on sunspots, rashes and sores; or leaves made as an infusion are used as a wash or a poultice. A hot poultice made of steeped leaves is said to be soothing to bladder pains, neuralgia, bruises, fistulas and persistent skin problems.

For any other therapeutic use, or people wishing to use it as a preventative and strengthen their immune system, the leaves and stems (fresh or dried) can be used as a tea, sweetened with honey, if desired. Some people blend the leaves together with fruit juice, or add to vegetables and fruits when juicing.

Rudolph Breuss, in his book, "Cancer and Leukaemia", gives advice for treatment of cancer and other, seemingly incurable, diseases, saying that: besides the vegetable juice regime, and kidney tea, herb robert is essential, when dealing with all cancers, as it stimulates the kidneys to reject and eliminate poisons. He recommended that a pinch of the herb be steeped in 1 cup of boiled water for 10 minutes and drunk, cold, daily. In one chapter in the book, he wrote on infertility recommending for couples who have had difficulty conceiving that both husband and wife
should sip a cup of herb robert daily (made the same way as for the cancer treatment above). He knows this method is effective, from feedback he has received. In his "hints for farmers" he recommends a handful of herb robert, mixed with concentrates and a little salt, fed to cows (for 3 days) that cannot come into calf. The astringent action, of leaves and stems of the plant, has been valued from medeval times, for healing wounds and to stop bleeding: which gave it the common name, 'bloodwort'.

DEVIL'S CLUB

(Botanical name: Oplopanax horridus)

Pharmaceutical family: Araliaceae(ginseng)





Common Names/Synonyms: **To native Alaskans, *cukilanarpak* means "big plant with needles." The name refers to the spiny stems of the plant. Also known as: tlingit aspirin, devil's walking stick, cukilanarpak, echinopanax horridus, fatsia horrida, panax horridum, Alaskan ginseng, Pacific Ginseng**

Parts Used: **Different parts of this plant are used by over 38 linguistic groups for over 34 categories of physical ailment, as well as many spiritual applications. Certainly the inner bark of the stem was most used, but the berries also and there is reference to using the roots.**

Found: **primarily native to western North America, but also found on islands in Lake Superior. It is found from South central and coastal Alaska to western Oregon and eastward to western Alberta and Montana. Disjunct native populations also occur over 1,500 kilometers (930 mi) away in Lake Superior on Isle Royaleand Passage Island, Michigan and Porphyry Island and Slate Island, Ontario. This species usually grows in moist, shaded, dense forest habitats, and is most abundant in old growth conifer forests.**

ID: **Common deciduous understory shrub, occuring in moist, well drained ecosystems. Generally grows to 1 to 1.5 meters (3 ft 3 in to 4 ft 10 in) tall; however, instances exist of it reaching in excess of 5 meters (16 ft) in rainforest gullies. It is not the true ginseng, but a related species. The spines are found along the upper and lower surfaces of veins of its leaves as well as the stems. The leaves are spirally arranged on the stems, simple, palmately lobed with 5-13 lobes, 20 to 40 centimeters (7.9 to 16 in) across. The flowers are produced in dense umbels 10 to 20 centimeters (3.9 to 7.9 in) diameter, each flower small, with five greenish-white petals. The fruit is a small red drupe 4 to 7 millimeters (0.16 to 0.28 in) diameter.**

Growing. ***Devil's club*** **reproduces readily by forming clonal colonies through a layering process. What can appear to be several different plants may actually have all been one plant originally, with the clones detaching themselves after becoming established by laying down roots. Can also propagate by seeds, root cuttings and divisions.**

Harvesting: Dig roots in spring, wash off soil and debris, then scrape or scrub off the outer brown bark. Peel off the light-colored inner bark with a vegetable peeler and cut into smaller pieces to dry.

Store dried root bark pieces in an airtight container in a cool, dry place.

History: ***Devils club (Oplopanax horridum)*****, also called *devil's walking stick*, is a large, hardy, thorn-bearing shrub native to Canada and the northwestern United States known to native Alaskans as *cukilanarpak*, which means "big plant with needles." The name aptly fits since the spiny stems of the plant certainly lend it a primitive appearance, and the fact that it grows in dense patches make navigating through it risky. In fact, groves of *devil's club* have been described as living fences that can exceed 10 feet in height.**

This plant has long been used for medicinal purposes by various indigenous peoples. Several Native American tribes still use *devil's club* to remedy respiratory and gastrointestinal ailments as well as inflammatory conditions, such as rheumatism and arthritis. The Haida and Tlingit purify themselves in preparation for the hunt by bathing and fasting with nothing more than *devil's club* tea. The Skagit commonly drink the tea after childbirth for its restorative properties, while a poultice made from the root bark is later employed to cease milk production when the child is ready to be weaned.

Although there is little clinical evidence to support the use of this herb to treat some of these conditions, certain compounds in the plant known as sesquiterpenes have been identified and isolated, namely stigmasterol and b-sitosterol. Both of these compounds are associated with antirheumatic and anticholesteremic effects, which means they reduce inflammation and blood cholesterol levels. Another chemical found in *devil's club* called oplopanone has been found to exert anti-tussive effects, which explains the herb's reputation as a treatment for cough. In vitro studies indicate that *devil's club* may also counteract microbes responsible for tuberculosis. In terms of topical use, one study showed that oil made from the root bark was more effective against psoriasis than hydrocortisone. Finally, the herb is said to balance the body's response to stress. This classifies *devil's club* root as an adaptogen, an attribute shared with its botanical cousin, Panax ginseng.

Constituents:

Phytochemical information on the active constituents of devil's club is somewhat confounded by varying taxonomic treatments of the genus *Oplopanax*. Most authorities treat *Oplopanax* as a genus made up of three species: *O. elatus* Nakai in Russia and Korea; *O. japonicus* (Nakai) Nakai in Japan; and *O. horridus* in North America. Throughout this paper we have adopted this treatment and refer to *O. horridus* in this strict sense when employing the common name devil's club. However, there are other authorities that treat all three as subspecies of *O. Horridus.* Since most research has been conducted on either the Russian or Japanese species (or subspecies) of *Oplopanax*, with little published descriptive phytochemical work on devil's club, it is unclear if many of the active constituents commonly cited as components of devil's club are actually present in North American devil's club, or only in the Russian and Japanese species. For example, Moore lists nerolidol, torreyol, dodinene, busnesol, dodecenol, cadene, and cerdrol as constituents of devil's club. However, since this research was conducted on *Oplopanax elatus* [*O. horridus* ssp. *elatus*] it is unclear if it is applicable to the North American populations of *O. horridus* [*O. horridus* ssp. *horridus*]. Another group of compounds also commonly cited as constituents of devil's club (*O. horridus*) are saponins (triterpenoid glycosides). Although a number of triterpenoids have been described from *O. elatus* and *O. japonicus*, to date none have been described from North American devil's club. Although it is likely that North American devil's club does contain some of the same compounds as these close relatives, presently the only published report to support this describes glycosidal principles of a possible saponin-like nature. There is also no evidence that devil's club contains a specific group of saponins known as the ginsenosides as is often claimed and used to assert its adaptogenic properties and therapeutic similarity to ginseng. Additionally, none of the saponins described in devil's club relatives *O. elatus* and *O. japonicus* are ginsenosides (saponins with dammarane type triterpenoid aglycones). According to Zhuravlev and Kokyada,*O. elatus* and a larger group of Russian Araliaceae species (including *E. senticosus*< do not contain ginsenosides, but rather saponins that have aromatic triterpenoid aglycones.

The earliest, and some of the only, published descriptive phytochemical work that has been conducted on the North American devil's club is by Kariyone and Morotomi, who described a sesquiterpene (equinopanacene) and a sesquiterpene alcohol (equinopanacol) in *O. horridus*. In more recent phytochemical investigations on *O. horridus,* Bloxton et al. reported a number of sterols and four sesquiterpenes, one of which (spatulenol) is novel to the genus. Kobaisy et al. described two novel and three previously described polyenes, one of which (oplopandiol) has recently been synthesized. These acetylenes all display significant antimycobacterial and antifungal activity and most are active against common bacteria such as *Staphylococcus aureus*, *Bacillus subtilis*, *Pseudomonas aeruginosa*, *Escherichia coli*, and *Candida albicans*. These compounds are also active against *Mycobacterium tuberculosis* and *Mycobacterium avium*, both of which can cause significant clinical tuberculosis, particularly virulent in immuno-compromised hosts, AIDS patients being especially vulnerable. Notably, these pathogens are also responsible for the epidemic status of tuberculosis in Canada's indigenous population. Since many strains of *M. tuberculosis* and *M. avium* are also resistant to the most commonly used antimycobacterial drugs, there is considerable interest in the potential of devil's club in tuberculosis therapy. Extracts of devil's club inner bark also partially inhibit a respiratory syncytial virus.

In other research, immunologist George Luciuk has claimed that devil's club has anti-microbial effects on upper and lower respiratory tract infections. In related investigations on the Russian species, Me et al. reported that essential oils derived from *O. elatus* show antifungal activity against five pathogenic species: *Microsporum gypseum*, *M. lanosun*, *Trichophyton gypseum*, *T. purpureatum*, and *Epidermophyton floccosum*. Aihua et al. also report that *O. elatus* shows anti-mycotic action against a number of common pathogenic fungi. Additionally, a sesquiterpene, a sesquiterpene alcohol, and a sesquiterpene ketone have been isolated from *O. japonicus*; a derivative of the latter is used in Japan in commercial preparations to treat coughs and colds.

Therapeutics:

Used as decoction, infusion, chewed raw, and often in baths and steam baths.
SHAMANICALLY: infusion of inner bark and roots, roots chewed also.

- **Protection Bark and stems used as an amulet, charcoal Aused for protective face paint, bark used in bath for protection, hoop of stem steeped through for protection against supernatural entities, epidemics, evil influences, love charms and shamans' spells, and inner bark sewn into pouch and worn around the neck as an amulet.**
- **Personal Purification Infusion of inner bark and inner bark used in bath.**
- **Purification of House Inner bark burned as a fumigant, placed in pouches, under pillows, or used with other plants to prepare an infusion to purify a house, often following a death.**
- **Prophylactic against witchcraft.**

Pharmacology/Actions:

Antifungal ADAPTOGEN Antiviral Antibacterial
Antimycobacterial (active against bacteria in the genus Mycobacterium)

Indications:

- **Widespread treatment of external and internal infections, including tuberculosis.**
- **Arthritis, rheumatism, respiratory ailments**
- **Emetic and purgative**
- **Aid in childbirth (post-partum)**
- **Internal hemorrhaging**
- **Analgesic**
- **Stomach, digestive tract ailments**
- **Broken bones**
- **Fever**
- **Dandruff**
- **Lice**
- **Headaches**
- **Cancer**

Preparation and Administration:

- **Inner bark often made into decoction or infusion but sometimes chewed.**
- **Roots made into decoction and used as wash for skin problems.**
- **Appetite Stimulant (using infusion of inner bark)**
- **Arthritis/Rheumatism (using infusion or decoction of inner bark, pounded leaves, sometimes roots. Inner bark is used in bath/steam bath, inner bark is chewed, crushed root is used as poultice, and whole stems are used to beat rheumatic limbs as counter-irritant.**
- **Birth Control: decoction of roots, used by Metis**
- **Blood purifier: decoction of inner bark, used by Carrier tribe**
- **Broken bone, decoction of inner bark, used by Haida**
- **Cancer, infusion of inner bark, used by at least five different tribes**
- **Childbirth/Menstruation: inner bark mashed and swallowed, or decoction of inner bark is taken as purgative to expel afterbirth, to start post-partum menstrual flow, regulate menstruation, and for cramps**
- **Diabetes, infusion or decoction of inner bark, sometimes roots, both alone and in mixtures. Used by13 different tribes**

- **Diphtheria, infusion of roots applied externally.**
- **Emetic/purgative: decoction or infusion of inner bark prepared in water or seal oil, both alone and in mixtures, roots chewed and the inner bark sometimes swallowed.**
- **Fever. Decoction of inner bark**
- **Flu: infusion of inner bark, alone and in mixtures, and the inner stem bark cheqed**
- **Gallstones: infusion of inner bark**
- **Hemorrhaging and blood disorders: infusion of inner bark, alone and in mixture, and berries pounded into paste taken internally.**
- **Heart Disease: berries pounded into paste taken internally.**
- **Insanity: introduced into system by beating with stems.**
- **Internal infections: infusion of inner bark**
- **Laxative: infusion or decoction of inner bark prepared both alone and in mixtures**
- **Lice/Dandruff: pounded berries rubbed on hair and scalp**
- **Lymph trouble (dropsy): ash of inner bark**
- **Measles: decoction of inner bark**
- **Pain, as analgesic: decoction of inner bark, inner stem bark, mixed with oil and eaten, dried inner bark laid into tooth cavity, steam bath with inner bark.**
- **Pneumonia: decoction or infusion of inner bark, inner bark used in steam baths with variety of additional plants.**
- **Respiratory ailments, coughs, colds: decoctions and infusions from inner stem bark, whole stems and sometimes roots, inner bark also chewed, used in sweat baths, and burned and dampened and worn around neck.**
- **Skin disease of acne, dandruff and others. Using infusion or decoction of roots as a skin wash.**
- **Sores,(swellings, cuts, boils, burns, external infections): inner bark or infusion of, used externally as a poultice or wound dressing or rubbed over sore, dried inner bark pulverized with pitch or burnt to ash and mixed with oil or grease (sometimes salmonberries and dog feces) and applied externally, berries pounded into a paste and applied externally, decoction of root applied externally and sliver of bark placed in wound to prevent infection.**
- **Stomach Trouble/pains, ulcers: infusion or decoction fo inner bark or paste made from berries taken internally.**
- **Tonic: infusion or decoction of inner bark or sometimes roots. Inner bark may be chewed. Bark ash infused.**
- **Venereal disease: decoction from inner bark and whole stems alone and in mixtures with other plants.**
- **Vision/blindness: infusion of inner bark taken internally. Inner bark applied externally with pitch and decoction used as an eyewash to reverse the effects of cataracts.**
- **Weight loss: infusion of de-spined stems.**

CAUTION AND NOTES FROM AMERICAN BOTANICAL:

Western herbalists report that the roots of devil's club (and to a lesser extent the inner stem bark) are a strong respiratory stimulant and expectorant and recommend their use for rheumatoid arthritis and other autoimmune conditions, as well as to treat eczema, sores, and a number of internal and external infections. Devil's club is also commonly recommended for the treatment of type II adult onset diabetes, a use of devil's club that is also extensive in indigenous communities. However, since there is considerable risk and uncertainty associated with such therapy, such recommendations should be viewed with caution. In one notable case, devil's club is recommended as a pancreatic tonic that is purported to help lower blood sugar levels by increasing the efficiency of insulin production in the pancreas. In this and other similar cases it is unclear if the reasoning given is based on the clinical evidence, which is equivocal and conflicting. Early clinical research on devil's club, inspired by its widespread use by indigenous peoples for adult diabetes, reported that a white precipitate isolated from extracts of devil's club "root bark" exhibited a hypoglycemic effect in lab hares. Subsequently, in experiments involving two human subjects, Justice presented some additional evidence to support the hypoglycemic activity of devil's club's root and stem bark. However, additional work by Piccoli et al., Sturr et al. and Thommasen et al. using extracts from "root bark," and research by MacDermot using a decoction of stems, provide data that do not substantiate the hypoglycemic activity reported previously. Since devil's club is still widely, and increasingly, used as a treatment for late onset type II diabetes and is listed in a recent review of antidiabetic plants, additional research and more rigorous clinical trials are required to validate and characterize or to disprove hypoglycemic properties in devil's club.

Notable commercial applications of devil's club that depart from traditional use include marketing strategies portraying devil's club as "Pacific ginseng," "Alaskan ginseng," or "wild armored Alaskan ginseng." In these cases, and on occasion when devil's club is promoted under its standardized common name, products are marketed on the basis of purported adaptogenic and tonic properties. Suggestions of its use as an alternative to ginseng parallel those of eleuthero (*Eleutherococcus senticosus* Maxim., Araliaceae), formerly called "Siberian ginseng." Devil's club is increasingly used as a ginseng substitute in marketed herbal formulas and is considered to have significant potential in U.S. and Asian markets in this role. Although devil's club is used as a tonic in some traditional medicinal applications, its properties as an adaptogen are by no means its most distinct. The belief of some herbalists that devil's club can be readily substituted for ginseng, with similar effects and benefits, has not been demonstrated empirically. Indeed, devil's club's emetic and purgative properties are often what some first-time users highlight when describing their experience with the plant (possibly due to ingestion of relatively high doses). Furthermore, any pharmacological and therapeutic similarities devil's club shares with ginseng are not well documented, and a number of authors stress that these plants should not be used as if they were the same. Additional applications that are unconnected to traditional indigenous use and appear to have no empirical basis include treatment for hyperthyroidism, for impotence, and as a phytoestrogen.

Another notable divergence between traditional and contemporary commercial applications of devil's club relates to the plant parts used. Most of the devil's club products currently available commercially, including devil's club teas, tinctures, capsules, and formulas that contain devil's club, contain "root bark" as the main ingredient. "Root bark" is also one of the most common plant parts sold as a crude drug. Unlike the traditional use of devil's club, which primarily involves inner bark of the aerial stems . The commercial use of devil's club "root bark" seems to be driven by perceived superior potency of roots. Like the marketing of devil's club under alternate common names that equate it with ginseng, the sale of devil's club "root bark" appears also to be an attempt to highlight devil's club's relationship to ginseng, since the root of the latter is used medicinally. Any therapeutic advantage of the roots over the stem bark, like the marketing of devil's club as a ginseng substitute, appears largely unsubstantiated by research, much of which has been conducted using stem inner bark. Furthermore, the commercial harvesting of devil's club roots in preference to stems has some important conservation implications. Devil's club is a shallow rooting, long-lived, clonal shrub that expands vegetatively through the layering of horizontal, or decumbent stems, and rarely by seedling. Like many medicinal plants, devil's club is not currently cultivated in any significant quantity and is almost exclusively wild-harvested. Although devil's club can be wild-crafted sustainably, the large-scale harvest of its interconnected clonal fragments may have an adverse impact on the persistence of populations.

Conclusion of American Botannical Society:

Devil's club, a highly significant species for indigenous peoples of western North America, is currently being harvested and marketed as a ginseng-like herbal medicine. Although it is related to ginseng, there is little conclusive research to demonstrate that it has ginseng's adaptogenic and immune-enhancing properties. There is however, extensive phytochemical evidence that supports devil's club's widespread use to treat internal and external infections, in particular its potential to control *Mycobacterium* spp. It is also commonly reported that devil's club has hypoglycemic properties and as such, it is used by indigenous and non-indigenous peoples alike to treat type II late onset diabetes. However, its efficacy as a treatment for this condition has not been clinically demonstrated. Furthermore, commercial development of devil's club has not been in keeping with the United Nations Convention on Biodiversity and a number of additional international agreements. To date, little or no consultation has been undertaken with the indigenous peoples from whom knowledge of devil's club's properties has been derived, and no provisions have been made for compensation or benefit sharing with the original users of devil's club. Additionally, indigenous peoples and others have raised concerns that commercial harvesting of devil's club, especially the roots, will compromise its ability to persist in some localities within its range. Before the commercial harvest and marketing of devil's club is expanded any further, it is imperative that researchers and promoters work in consultation with the indigenous users of this culturally significant shrub to determine (1) appropriate (e.g., ethical) harvesting methods and applications, (2) active pharmacological compounds, and (3) modes of production that are sustainable and that conform to the requirements of the Biodiversity Convention and other international protocols. Until these steps have been accomplished, the commercialization of devil's club is at best problematic.