UNLOCKING THE HEALING POWER OF ADAPTOGENS AND ANTIOXIDANTS TO ACHIEVE OPTIMAL HEALTH

People have been using adaptogenic herbs for more than 2,500 years. and much of today's medical research confirms their healing power.

Adaptogens are natural substances found only in a few rare plants and herbs. These plants and herbs provide special nutrients that help the body achieve optimal mental, physical, and work performance.

The use of adaptogens has been a part of Ayurvedic, Chinese, North American Indian, and alternative medicines for centuries.

Researchers have found that adaptogenic herbs can support the healthy function of bodily systems and protect the body from biological, chemical, environmental, and psychological stressors.

In traditional Chinese medicine, adaptogenic herbs were used to increase endurance, reduce fatigue, enhance immunity, and increase life span. Today, more than 50 years of scientific research has confirmed these health benefits and much more:

Central nervous system: They enhance intellectual performance, alertness, concentration, learning, and memory.

Immune system: They increase production of T cells, which fight bacteria, viruses, and cancer.

Stress response: They regulate the release of stress hormones and enhance the flexibility of the stress response system.

Energy and Sleep: They boost energy on the cellular level and help regulate cortisol production, which directly affects sleep quality.

INTRODUCING – THE FINEST IN NATURE AND SCIENCE

This is a custom-formulated proprietary blend of seven adaptogens and three additional antioxidant herbs. The formulation, shown below, was studied in numerous clinical studies, and resulted in published research papers.

- 50 years of scientific research
- 3000 clinical trials
- 1200 scientists
- Millions of dollars invested

THE PROPRIETARY BLEND

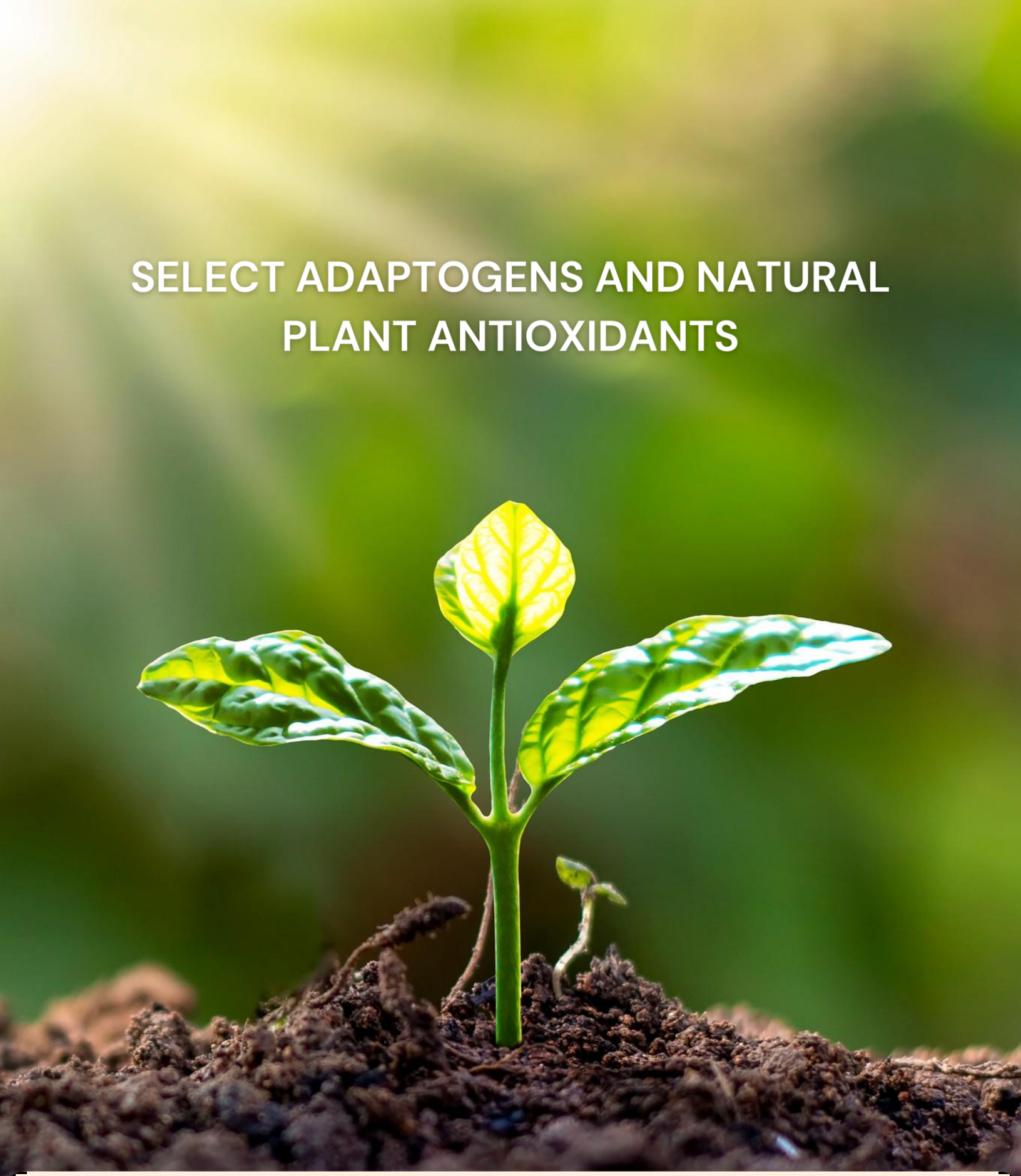
This blend of "adaptogenic" wild-crafted herbs is extracted from virgin forests and formulated as a liquid elixir to be taken daily.

1. Completely non-toxic to the human body and have no harmful effects no matter what amount or how long they are used.
2. Adaptogens catalyze responses in the body to increase the body's mental and physical performance as well as provide resistance to stressful insults at the cellular level.
3. Their effect is to balance and normalize the body's systems leading to overall homeostasis and health.

Scientists have devoted their lives to the discovery and application of natural substances that would have the greatest benefit to mankind, they were determined to combine the herbs having the greatest benefit into one 'elixir,' the result is the blend, presented here.

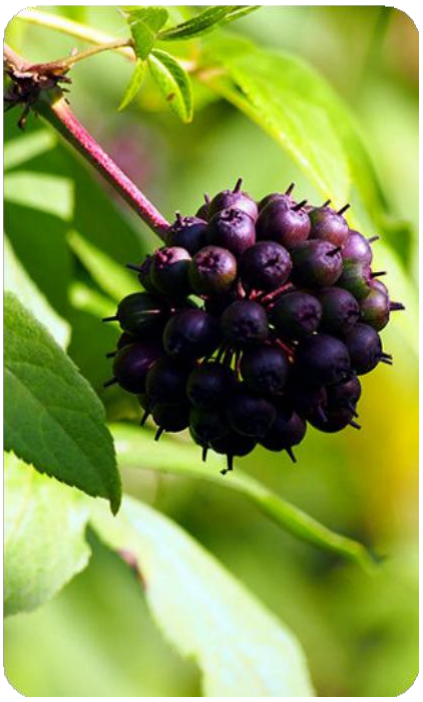
A group of 11 medical researchers have published their conclusions, that it is now time for mainstream medicine to incorporate a more holistic "adaptogen approach" into their pharmacological treatments, calling "for their use in stress-induced and aging-related diseases." (Link to Full Document) (See Excerpts on Page 14 - APPENDIX A)

SELECT ADAPTOGENS AND NATURAL PLANT ANTIOXIDANTS



DISCLAIMER: *This document contains references to published research findings into the properties of specific compounds and plants that are presented here as an update of current subject research. This information is based on the author's own examination of published peer-reviewed research findings and does not appear on any company's official website or branded products.*

ELEUTHEROCOCCUS SENTICOSUS
(SIBERIAN GINSENG) - "KING OF ADAPTOGENS"



- Combats Stress, Fatigue. 3, 4
- Tonic – Increased workability. 3
- Stimulated mental workability. 2, 5
- Increases resistance to heat and cold.
- Resistance to infections, 3, 4
- Resistance to tumor formation 4
- Improves eyesight – color and clarity. [link]
- Athletic Performance. 3, common among athletes for endurance and performance 5
- Immune Function, HIV and AIDS Support, Chronic Fatigue Syndrome. 3
- Infections, Influenza, Common Cold, and Sore Throat. 3
- Supports adrenals, is a nonspecific adaptogen, increases T-helper cells and NK activity—valuable in treating CFS. 1, 2, 3, 4
- Findings suggest that Eleutherococcus senticosus extracts decreased the intracellular triacylglycerol content, presumably by increasing lipase in adipocytes and metabolism-associated protein expression as well as mitochondrial biogenesis in muscle cells. These effects may corroborate previous in vivo findings regarding the ergogenic effects, (increased capacity for bodily or mental labour, especially by eliminating fatigue symptoms) of Eleutherococcus senticosus supplementation. 5

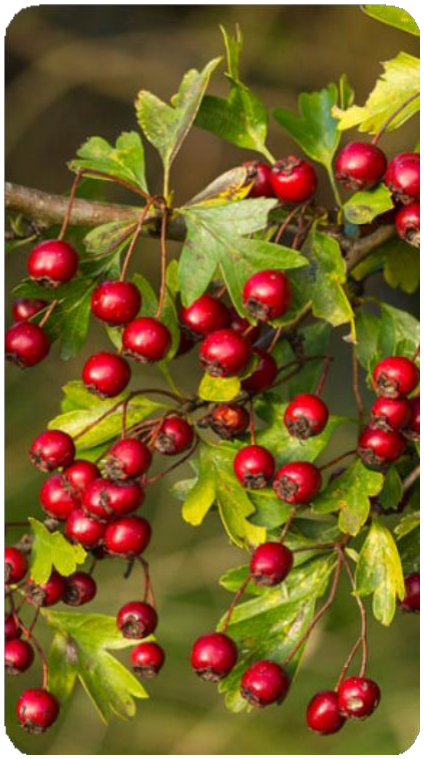
1. Eleutherococcus senticosus. Eleuthero is an important traditional medicine in China and Russia, used to stimulate the immune system, for prophylaxis of infectious diseases, and to enhance stamina and performance [link].
2. Effects of various Eleutherococcus senticosus cortex on swimming time, natural killer activity and corticosterone level in forced swimming stressed mice [link].
3. Eleuthero. Michigan Medicine. This supplement has been used in connection with the following health conditions [link].
4. "Scientists are unsure how Siberian ginseng works. Compounds from the plant have been shown to stimulate immune cells and protect the nervous system but no large-scale clinical trials have been conducted. In studies of postmenopausal women, Siberian ginseng supplements lowered LDL (bad) cholesterol levels and improved HDL (good) cholesterol levels, reduced knee osteoarthritis pain and symptoms, and improved bone metabolism. More research is needed." – Memorial Sloan Kettering Cancer Center [link].
5. The effect of eleutherococcus senticosus on metabolism-associated protein expression in 3T3-L1 and C2C12 cells [link].

VIBURNUM OPULUS -
(CRAMP BARK, GUELDER ROSE, SNOWBALL BUSH)
- A NATURAL PLANT ANTIOXIDANT -

- Many of the health-promoting properties of VO are associated with antioxidant activity 1
- Relevant for Diabetes Mellitus and Obesity 2, 6
- The consumption of *V. opulus* fruit and bark extracts may be beneficial for the prevention of staphylococcal infections 3
- A promising source of health-beneficial phytochemicals 1
- Aids in preventing seasonal diseases such as colds, influenza, and coughs. 1
- High in polyphenolic substances and vitamin C. 1
- Shows marked cytotoxicity effects against several cancer cell lines. 1, 5
- Biological properties, including antimicrobial, anti-oxidative, anti-inflammatory, cytoprotective, anti-cancer, anti-obesity, and anti-diabetic activities. 1, 5, 6
- Demonstrated anti-inflammatory, anti-obesity, anti-diabetic, osteogenic, cardio-protective, and cytoprotective properties 1, 2
- Preclinical evidence supports antibacterial, anti-inflammatory 5, cytotoxic, and anticancer properties of certain species, such as *V. opulus*. 1, 2
- The health benefits of VO result from the presence of bioactive components such as phenolic compounds, vitamin C, carotenoids, iridoids, and essential oils. 1
- Gilaburu (Viburnum opulus L.) fruit shows both anti-inflammatory 5 and antioxidant 1 effects by suppressing neutrophil infiltration, regulating inflammatory mediators, inhibiting reactive species production, lipid peroxidation, and apoptosis, conserving endogenous antioxidant glutathione, and ameliorating oxidative DNA damage. Since the current ulcerative colitis drugs display limited benefits and adverse side effects, potential therapeutic and/or prophylactic role of gilaburu can be evaluated in ulcerative colitis. 5, Greater expulsion of rethral stones 4, Helps uterine pain 6

1. Viburnum opulus L. – A Review of Phytochemistry and Biological Effects [link].
2. Evaluation of Viburnum opulus L. Fruit Phenolics Cytoprotective Potential on Insulinoma MIN6 Cells [link].
3. An in Vitro Study of the Effect of *Viburnum opulus* Extracts on Key Processes in the Development of Staphylococcal Infections [link]
4. Genus Viburnum: Therapeutic Potentialities and Agro-Food-Pharma Applications [link].
5. Gilaburu (Viburnum opulus L.) fruit extract has potential therapeutic and prophylactic role in a rat model of acetic acid-induced oxidant colonic damage [link]
6. On the Use of Viburnum Opulus (L.) in Dysmenorrhœa and Uterine Pain [link]

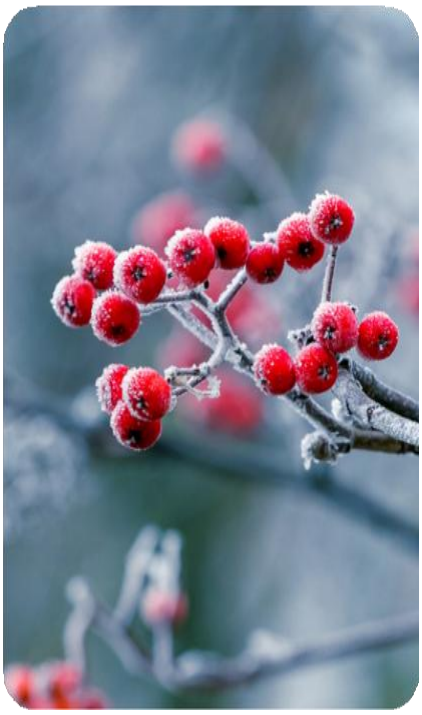
CRATAEGUS LAEVIGATA
(ENGLISH HAWTHORN, WOODLAND HAWTHORN, MAYFLOWER)
- A NATURAL PLANT ANTIOXIDANT -



- Decreases cholesterol levels. 1
- Decreases angina (chest pain) by dilating the cardiac blood vessels. 1
- Prevents congestive heart failure by improving the contractions of the cardiac muscles, very similar to prescription medication.
- Lowers blood pressure. 1
- Promotes a regular cardiac rate and rhythm. Improves general circulation.
- Helps reduce excessive inflammation. 1, 5
- Hawthorn extracts possess cardioprotective and anti-atherosclerotic properties and contain major bioactive components identified as flavonoids, polyphenols, and oligomeric procyanidins. 3
- Regulates inflammation. 4, 5
- Regulates apoptosis-related factors. 4
- Liver therapeutic: for toxic hepatitis, alcoholic liver disease, non-alcoholic fatty liver disease, and hepatocellular carcinoma. 6

1. Hawthorn Berry Health Benefits that May Surprise You - By Annie Price / Dr. Axe, CHHC April 15, 2017 [link].
2. Hawthorn Benefits and Uses for Heart Diseases and Other Ailments – The Herbal Resource [link].
3. Roles and Mechanisms of Hawthorn and Its Extracts on Atherosclerosis: A Review [link].
4. Hawthorn Extract Alleviates Atherosclerosis through Regulating Inflammation and Apoptosis Related Factors: An Experimental Study [link].
5. Hawthorn polyphenols reduce high glucose-induced inflammation and apoptosis in ARPE-19 cells by regulating miR-34a/SIRT1 to reduce acetylation [link].
6. Potential Roles and Key Mechanisms of Hawthorn Extract against Various Liver Diseases [link].

SORBUS AUCUPARIA
(ROWAN BERRY, MOUNTAIN ASH)



- Excellent source of natural vitamins and Carotenoids. 1, 3
- Reduce the lipids in the liver and cholesterol in blood. Possess cholagogue and diuretic properties influencing urolithiasis in the kidneys and urinary tract, and also possess anti-inflammatory, hemostatic, aid capillary-tonic activity.
- Vitamin, astringent, easy laxative, sudorific action. Helps to lower blood pressure, raise the coagulability of blood, and is used as an agent for lowering the fat content in the liver and cholesterol in blood.
- Treatment of headaches.
- Significant Antioxidant activity, (mostly promoted by polyphenolic compounds). 1, 3, 5
- A rich source of vitamins, polysaccharides, organic acids, and minerals. 2
- Rowanberry extracts can counteract some side effects of type 2 diabetes, such as cardiovascular complications. One study result showed that extracts from rowanberries had an antithrombotic and protector effect on endothelial functions by protecting human fibrinogen against oxidative modifications, inhibiting thrombin enzymatic properties, diluting the generated fibrin clots and by the inhibiting of hyaluronidase activity. 3

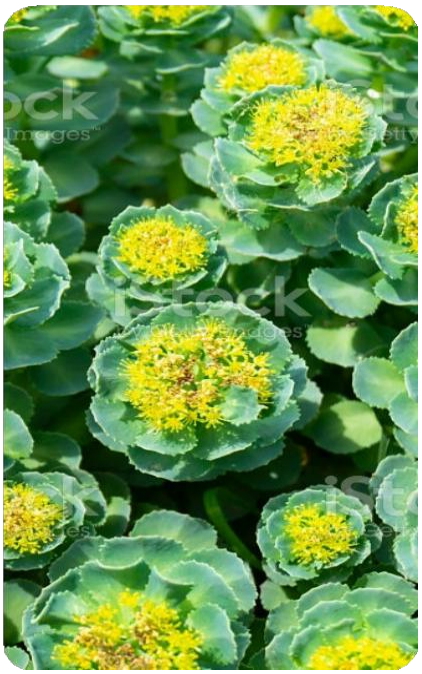
1. Total Phenolic and Total Flavonoid Content, Individual Phenolic Compounds, and Antioxidant Activity in Sweet Rowanberry Cultivars [link].
2. Rowanberry—A Source of Bioactive Compounds and Their Biopharmaceutical Properties [link].
3. The Effects of Sorbus aucuparia L. Fruit Extracts on Oxidative/Nitrative Modifications of Human Fibrinogen, Impact on Enzymatic Properties of Thrombin, and Hyaluronidase Activity In Vitro [link].
4. Mountain Ash – Rowan Berry- sources, health benefits, nutrients, uses, and constituents – NaturalPedia.com [link].
5. Health benefits of Rowan Berry [link].

RHAPONTICUM CARTHAMOIDES – (MARAL ROOT)

- Tonic and stimulant for mental activity. 1
- Tonics and stimulant for physical activity. 1
- Combats physical fatigue.
- Immuno stimulatory. 1
- Combats impotence. 2
- Improves the brain's blood supply. 1
- Lowers cholesterol in animal studies.
- Normalizes some oxidative processes. 1
- Increases work performance. 1, 2
- Enhances physical strength and muscle protein synthesis. 2
- Contains 225 compounds, including sesquiterpenes, ecdysteroids, triterpenes, sterols, thiophenes, hydroxycinnamates, flavonoids, lignans, nucleosides and vitamins, alkanes, fatty acids, and carbohydrates. 1
- Has a wide range of biological activities, including anti-inflammatory, antitumor, immunostimulatory, anxiolytic, stress-protective, actoprotective, anti-hypoxic, anabolic, hepatoprotective, inhibition of PPARy receptors, anti-atherosclerotic, and hypolipidemic. 1
- Additional biological effects e.g.: antioxidant, anticancerogenic, antimicrobial, antiparasitic, and insect antifeedant or repellent activities. 2, 3
- Beneficially affects both lipogenesis and lipolysis. 4
- Has Potent Anticancer Activity in Human Leukemia and Lung Adenocarcinoma Cell Lines. 5

1. The Ethnopharmacological Uses, Metabolite Diversity, and Bioactivity of Rhaponticum uniflorum (Leuzea uniflora): A Comprehensive Review [link].
2. Primary benefits of Rhaponticum Carthamoides [link].
3. Chemistry and pharmacology of Rhaponticum carthamoides: a review [link].
4. Anti-Adipogenic Activity of Rhaponticum carthamoides and Its Secondary Metabolites [link].
5. Rhaponticum carthamoides Transformed Root Extract Has Potent Anticancer Activity in Human Leukemia and Lung Adenocarcinoma Cell Lines [link].

RHODIOLA ROSEA
(GOLDEN ROOT, ARTIC ROOT)



- Increases endurance for static and dynamic workloads. 1, 3, 4
- Helps to improve sports performance by reducing physical and mental fatigue and increasing antioxidant activity. 1, 5
- Helps with Anxiety and Depression. 1
- Anti-metastatic. 4, 6
- Combats impotence. Improves cardiac activity. 3
- May help manage diabetes. 1
- Improves Hypotonia (a state of low muscle tone, often associated with muscle weakness). 3
- Effective in the treatment of neurosis (Tomsk Medical University). 5
- May improve brain function, including learning, memory function, and emotional behavior. 1, 5
- Rhodiola rosea has been shown to possess antioxidant, adaptogenic, antistress, antimicrobial, immunomodulatory, angiomodulatory, and antitumoral effects. 4, 5, 6

1. Science-Backed Health Benefits of Rhodiola Rosea Healthline [link].
2. Rhodiola Rosea – Herb Uses and Health Benefits – The Herbal Resource [link].
3. Summary of Rhodiola Rosea – Primary Information, Benefits, Effects, and Important Facts [link].
4. Immunomodulatory and Antiproliferative Properties of Rhodiola Species [link].
5. Salidroside, a Bioactive Compound of Rhodiola Rosea, Ameliorates Memory and Emotional Behavior in Adult Mice [link].
6. Rhodiola rosea L.: an herb with anti-stress, anti-aging, and immunostimulating properties for cancer chemoprevention [link].

SCHISANDRA CHINENSIS
(SCHISANDRA, MAGNOLIA VINE)

- Anti-atherosclerotic activity. Improves eyesight.
- Combats effects of physical and mental over exertion. Combats sleeplessness.
- Improves sexual activity.
- Widely used in Japan, China, and Russia to combat fatigue. 2
- Confirmed adaptogenic effects, central nervous system stimulation, hepatoprotective effects, and potential anticancer potential. 5, 6
- Neurasthenia (a condition characterized by lassitude, fatigue, headache, and irritability, associated chiefly with emotional disturbance). 2
- A potential source of medicine for the treatment of aging-associated neurodegenerative diseases, such as **depression, neurosis, anxiety, Alzheimer's D,** and alcoholism 2, 3, 4
- Inhibits non-small cell lung cancer cell proliferation by inducing cell cycle arrest, apoptosis, and autophagy. 6

1. Schizandra chinensis - An overview of neuroprotective and cognitive enhancement properties of lignans from Schisandra chinensis [link].
2. Schizandra chinensis - Effects of Lignans from Schisandra chinensis Rattan Stems against Aß1-42-Induced Memory Impairment in Rats and Neurotoxicity in Primary Neuronal Cells [link].
3. Schizandra chinensis - Lignans from Schisandra chinensis ameliorate cognition deficits and attenuate brain oxidative damage induced by D-galactose in rats [link].
4. Schizandra chinensis - The effects of a lignan-riched extract of Shisandra chinensis on amyloid-β-induced cognitive impairment and neurotoxicity in the cortex and hippocampus of mouse. **Conclusions:** These data suggested that the extract of Schizandra chinensis fruits riched with dibenzocycloctadiene lignans may be useful in the prevention and treatment of Alzheimer's disease. [link].
5. Schisandra chinensis and its phytotherapeutical applications [link].
6. Schizandrin A can inhibit non-small cell lung cancer cell proliferation by inducing cell cycle arrest, apoptosis, and autophagy [link].

ARALIA MANDSHURICA
(MANCHURIAN THORN TREE, JAPANESE ARALIA)

- Stimulates central nervous system. 1
- Stress-protective. 1
- Stimulates glucocorticoid function of adrenal glands.1 Increases oxidative-restorative processes. 1
- Exhibits antioxidant action. 1
- Strong antitoxic action. 1
- Folk Medicine uses Stomatitis (inflammation of the mucous membrane of the mouth), Grippe, Cold, and nocturnal enuresis (involuntary urination).
- Has cardioprotective and antiarrhythmic activities. Increases physical working capacity and affords a stress-protective effect against a broad spectrum of harmful factors including cold stress, immobilization, UV irradiation, and low air pressure. 1
- This phytoadaptogen exerts an effect on the central nervous, reproductive, immune, respiratory, and gastrointestinal systems; the metabolic syndrome including hypolipidemic and antidiabetic effects; and blood coagulation. 1
- Shows cytotoxic activities against some tumor cell lines. 1
- Regulates biosynthesis of pro-inflammatory cytokines and inflammation-related protein expression, tissue respiration, and oxygen consumption. 1
- Increases mental performance, working capacity, and endurance of Movement.1
- The adaptogen of choice for patients with obesity diabetes and cardiovascular disease. 1
- The antiarrhythmic activity of phytoadaptogens in short-term ischemia-reperfusion of the heart and postinfarction cardiosclerosis. 1, 3

1. Aralia mandshurica - An overview of pharmacological studies [link].
2. Research progress in pharmacological effects of Aralia elata [link].
3. Antiarrhythmic activity of phytoadaptogens in short-term ischemia-reperfusion of the heart and postinfarction cardiosclerosis [link].

GLYCYRRHIZA URALENSIS - (CHINESE LICORICE)

- Anti-inflammatory. 1, 6
- Uses in Folk Medicine: Lung disease, Expectorant, Ulcers, Cancer. 1, 2
- Anti-viral. 2, 4, 5, 6
- Anti-allergenic.
- Inhibitory effects on diabetes. 2
- Anti-cancer action. 2
- Immunomodulatory activities. 7
- Biological activities include antitumor, anti-inflammatory, antiviral, antimicrobial, immunoregulatory, cardioprotective, and neuroprotective functions. 1, 3, 6, 7
- Beneficial effects in treating throat infections, tuberculosis, respiratory, liver diseases, antibacterial, anti-inflammatory, and immunodeficiency. 1
- A component of Chinese Licorice called GLYCYRRHIZIN, binds with COVID-19 / (SARS-CoV-2), preventing it from invading the body via its ACE-2 receptors. 4, 5, 6 The potent antiviral activity as well as anti-inflammatory properties highlight glycyrrhizin as an excellent candidate for further clinical investigations in COVID-19 treatment." 1, 2, 6, (See: COVID-19 Survey: APPENDIX B) 8

1. Glycyrrhiza glabra (Licorice): A Comprehensive Review on Its Phytochemistry, Biological Activities, Clinical Evidence and Toxicology [link].
2. The antiviral and antimicrobial activities of licorice, a widely-used Chinese herb [link].
3. Pharmacological Mechanisms and Adjuvant Properties of Licorice Glycyrrhiza in Treating Gastric Cancer [link].
4. What is the ACE2 receptor, how is it connected to coronavirus and why might it be key to treating COVID-19? The experts explain [link].
5. Glycyrrhizin: An old weapon against a novel coronavirus [link].
6. Glycyrrhizin Effectively Inhibits SARS-CoV-2 Replication by Inhibiting the Viral Main Protease [link].
7. The immunomodulatory activities of licorice polysaccharides (Glycyrrhiza uralensis Fisch.) in CT 26 tumor-bearing mice [link].
8. COVID-19 - Adaptogen/Antioxidant SURVEY – July 2020 Preliminary Survey of 10,000 Subjects on a Specific Herbal Adaptogen-Antioxidant (AA) Formula Found a 94% Reduction in Covid-19 Infection Rates, Compared with the General Population. [link]

INONOTUS OBLIQUUS - (CHAGA MUSHROOM)

- Used for centuries to treat cancer, diabetes, stomach ailments, blood disorders, bronchitis, liver damage, hypertension, tumors, and other antibacterial or antiviral infections. 1
- Stimulates the central nervous and neurohumoral systems, improves metabolism including activation of metabolism in cerebral tissue, regulates the activity of cardiovascular and respiratory systems, stimulates the homogeny (increase the level of leukocytes), acts as an overall strengthening means, increases the resistibility. of the body to the infectious diseases, possesses antipyretic properties during the internal and local application, strengthens the cytostatic activity of antitumorigenic preparations, inhibits the increase of tumors, causing their
  gradual regression and slow down the development of metastases, i.e., possesses cytostatic action. 1, 2, 3
- Has the potential to eliminate cancer stem cells (CSC). 6
- Helps to restore the natural resistance processes of the organism and increases its protecting mechanisms directed towards the fight with malignant tumors (i.e.: adenocarcinoma 3, breast cancer 4, etc.).
- Normalizes the activity of the gastrointestinal tract and intestinal micro flora, anti-parasitic, has hypoglycemic and insulin sensitivity potential.
- Healthy life energy balance ("Chi'), preserves youth, promotes longevity, and boosts the body's immune system to fight viral, bacterial, fungal, and parasitic maladies. 2
  Antitumor, immunomodulatory activity, possesses antitumor, antioxidant, anti-virus, hypoglycemic, anti-inflammatory, anti-fatigue, hepatoprotective, cardioprotective, and hypolipidemic activities. 1, 2, 5

1. Recent Developments in Inonotus obliquus (Chaga mushroom) Polysaccharides: Isolation, Structural Characteristics, Biological Activities and Application [link].
2. Inonotus obliquus (Chaga mushroom) – from folk medicine to clinical use [link].
3. Bioactivity-based analysis and chemical characterization of cytotoxic constituents from Chaga mushroom (Inonotus obliquus) that induce apoptosis in human lung adenocarcinoma cells [link].
4. Chaga mushroom extract induces autophagy via the AMPK-mTOR signaling pathway in breast cancer cells [link].
5. Progress on understanding the anticancer mechanisms of medicinal mushroom: inonotus obliquus [link]
6. PubMed Search: “chaga and cancer stem cells” (51 results) [link].

APPENDIX A

Med Res Rev. 2021 Jan; 41(1): 630–703.
Published online 2020 Oct 25. doi: 10.1002/med.21743
PMCID: PMC7756641
PMID: 33103257

EVOLUTION OF THE ADAPTOGENIC CONCEPT FROM TRADITIONAL USE TO MEDICAL SYSTEMS: PHARMACOLOGY OF STRESS- AND AGING-RELATED DISEASES

Alexander G. Panossian, 1 * Thomas Efferth, 2 ,* Alexander N. Shikov, 3 ,* Olga N. Pozharitskaya, 4 ,* Kenny Kuchta, 5 ,* Pulok K. Mukherjee, 6 ,* Subhadip Banerjee, 7 ,* Michael Heinrich, 8 ,* Wanying Wu, 9 ,* De-an Guo, 10 ,* and Hildebert Wagner 11 ,*

Full Paper: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7756641/

(Includes 628 Research References)

Abstract (Excerpt):
"The evolution of the adaptogenic concept has led back to the basics of TMS (Traditional Medical Systems) and a new level of understanding of the holistic approach. It provides a rationale for their use in stress-induced and aging-related diseases."

Overall Conclusions (Excerpt):
"Adaptogens play key roles in defending organisms against environmental challenges including harmful bacteria, diseases carried by insects, excessive ultraviolet rays from the sun, and challenges from pollution, excess heat and cold, and hypoxia. The key to understanding adaptogens is their role in establishing and maintaining adaptive homeostasis by building the body's natural resistance to stressors, which may be physical, chemical, biological, and psychological in nature. Adaptogens function like stress vaccines to activate the body's defense system and metabolic rate, reversing the negative physical effects of stress and restoring the body's balance and health.

- If the immune system is not functioning properly by overreacting or underreacting to challenges, adaptogens help restore the proper immune response.
- If the immune system is overly active, triggering allergies and asthma, rheumatoid arthritis, or lupus, adaptogens lower the immune system's response and return it to a normal level. If the immune system is underactive, leading to frequent colds, bronchitis, sinus, or ear infections, and even pneumonia or causing anemia or digestive problems such as ulcers or chronic diarrhea, adaptogens can help strengthen the immune response, thereby ending the cycle of illness.
- If the brain chemistry is unbalanced, adaptogens can restore balance, having profound effects on cognitive function, memory, and mood.

The power of adaptogens goes far beyond the immune system:

- **Adaptogens can correct imbalances in cellular division cycles that cause cells to divide in an uncontrolled manner, eventually causing cancer.**
- **Adaptogens have the potential to prevent or postpone chronic diseases associated with aging, recognizing their uncanny ability to fix what's wrong, boost what is right, keep the body in balance, and prevent the body's functions from deteriorating.**
- **Adaptogenic effects like those seen in Ginseng, Rhodiola, Eleutherpcoccus, Withania, and Schisandra have been scientifically validated as being effective against chronic inflammation, atherosclerosis, neurodegenerative cognitive impairment (e.g., Alzheimer's disease and other forms of dementia), metabolic disorders, diabetes, cancer, and a host of other aging-related diseases.**

APPENDIX B

COVID-19 Adaptogen/Antioxidant SURVEY - July 2020 Preliminary Survey of 10,000 Subjects on a Specific Herbal AdaptogenAntioxidant (AA) Formula Found a 94% Reduction in Covid-19 Infection Rates, Compared with the General Population.

Full Paper: https://mrrl.info/Covid-19-AdaptogenSurvey-Generic-240224f.pdf

---

SUPPLEMENTARY PAPER ON ADAPTOGENS:

Pharmaceuticals (Basel). 2010 Jan; 3(1): 188–224. Published online 2010 Jan 19. doi: 10.3390/ph3010188	PMCID: PMC3991026 PMID: 27713248

Authors: Alexander Panossian* and Georg Wikman

Effects of Adaptogens on the Central Nervous System and the Molecular Mechanisms Associated with Their Stress—Protective Activity

Full Paper: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3991026/

Conclusions and Perspectives of Implementation

Recent pharmacological studies of some adaptogens give a rationale to their effects at the molecular level. It has been shown that the beneficial stress-protective effect of adaptogens is related to the regulation of homeostasis via several mechanisms of action, which are associated with the hypothalamic-pituitary-adrenal (HPA) axis and the regulation of key mediators of the stress response, such as molecular chaperons (e.g., Hsp70), stress-activated c-Jun N-terminal protein kinase (JNK1), Forkhead box O (FoxO) transcription factor, cortisol and nitric oxide (NO). In summary, adaptogens may be regarded as a novel pharmacological category of anti-fatigue drugs that:

(i) induce increased attention and endurance in situations of decreased performance caused by fatigue and/or sensation of weakness.

(ii) reduce stress-induced impairments and disorders related to the function of stress (neuro-endocrine and immune) systems.

It was suggested that adaptogens have not only specific therapeutic effects in some stress-induced and stress-related disorders, but will also have an impact on the quality of life of patients when implemented as adjuvants in the standard therapy of many chronic diseases and pathological conditions (e.g., post-surgery recovery, asthenia, congestive heart failure, chronic obstructive pulmonary disease). It may be suggested that adaptogens have potential use in age related disorders, such as neurodegenerative diseases, and cardiovascular diseases. Thus, elderly people may be able to maintain their health status on a normal level, improve their quality of life and may increase longevity.

However, further research may be needed to evaluate the efficacy of adaptogens as geriatrics and to elucidate molecular mechanisms of action of these complex herbal extracts and their active principles.