

Adrenal

Applications

- Stress Management
- Adrenal Support
- Antioxidant Support
- Neurological Support
- Athletic Support



Introduction

NutraMedix Adrenal is a proprietary blend of hydro-ethanol extracts from adaptogenic herbs, including **astragalus root** (*Astragalus mongholicus*), **rhodiola root** (*Rhodiola rosea*), **American ginseng root** (*Panax quinquefolius*), and **schisandra berry** (*Schisandra chinensis*). Adaptogens help support a healthy stress response by facilitating adaptation to physical and mental stress, enhancing the ability to adjust and thrive in uncertain circumstances.¹ In traditional Chinese health practices, adaptogens are generally known as qi tonics.¹

Astragalus root (*Astragalus* spp.) has been used for centuries in traditional Chinese health practices, where it is known as *huang qi* and considered a qi tonic, nourishing overall wellness and vitality.¹ The first known written mention of this herb is from the second century *Shen Nong Ben Cao Jing*.² Astragalus belongs to the Fabaceae family, and its constituents include astragaloside along with the flavonoids calycosin, quercetin, ononin, calycosin-7-glucoside, formononetin, and kaempferol.³

Rhodiola root (*R. rosea*) is native to Tibet, Mongolia, and China, and belongs to the Crassulaceae family.⁴ The first known written mention of this herb is from the first century *De Materia Medica* by the Greek physician Dioscorides.⁵ The polyphenol content is approximately 41% and includes rosavin, salidroside and tyrosol.⁴ *R. rosea* is also known as golden root or rose root, and is

used in Asia and Eastern Europe to support both physical and mental performance.⁴

American ginseng root (*P. quinquefolius*) is native to eastern North America and belongs to the Araliaceae family.⁶ It is used in traditional Chinese health practices where it is known as *xi yang shen* and is considered a qi tonic.¹ The first known written mention of this herb is from the *Ben Cao Cong Xin* by Wu Yi-Luo in 1751.⁷ Constituents include ginsenosides, polysaccharides, phenolic compounds, polyacetylenes, peptides, and essential oils.⁶

Schisandra berry (*S. chinensis*) has been used for centuries in traditional Chinese health practices where it is known as *wu wei zi*, or “five-flavored seed.” It belongs to the Schisandraceae family. The first known written mention of this herb is from the second century *Shen Nong Ben Cao Jing*.² Schisandra is considered balancing, containing the five different tastes of sweet, salty, pungent, bitter, and sour.⁸ Constituents include lignans, flavonoids, phenolic acids, triterpenoids, organic acids, and fatty acids.^{9,10}

NutraMedix Adrenal is made at our U.S. manufacturing facility using a specialized proprietary extraction process that optimizes the constituents of the herbs in their original, unprocessed state to obtain broad-spectrum concentration. Because our extracts are made in our own facility, we control all aspects of quality, including stringent ID testing, microbial testing,

and heavy metal testing. NutraMedix rigorously follows current good manufacturing practices (cGMP), as do our suppliers.

Stress Management and Adrenal Support

To understand how **NutraMedix Adrenal** may help support a healthy stress response, we first need to understand how the nervous system responds to everyday stress. The autonomic nervous system consists of two divisions, the sympathetic nervous system (fight or flight) and the parasympathetic nervous system (rest and digest). Ideally, there is a healthy balance between the sympathetic and parasympathetic responses. However, in today's world with low levels of everyday stress, the adrenal glands may work to keep up with secreting the epinephrine and norepinephrine that facilitate the sympathetic response.

Adaptogens may help support healthy adaptation to mental and physical stress, aiding in healthy stress management. A normal stress response avoidsoverworkingtheadrenalsandhelpsmaintain levels of epinephrine and norepinephrine already within the normal range. Through supporting these adaptive mechanisms, adaptogens help with both adrenal support and athletic support, nourishing vitality and facilitating healthy stress management. Additionally, NutraMedix Adrenal may help support antioxidant activity and healthy neurological function.

Astragalus root (*Astragalus* spp.) have been used for centuries in traditional Chinese health practices to support vitality.¹¹ **Rhodiola root** (*R. rosea*) may help support normal physical and mental energy as well as healthy stress management.^{12,13} Salidroside from rhodiola root may help support exercise tolerance,⁴ as well as the normal capacity for mental work ($p < .001$).¹⁴ **American ginseng root** (*P. quinquefolius*) may help support healthy energy levels.¹⁵ **Schisandra berry** (*S. chinensis*) may help support healthy physical endurance.¹⁶

Other Support

Antioxidant Support

Salidroside from **rhodiola root** (*R. rosea*) may help maintain malondialdehyde (MDA), catalase (CAT), superoxide dismutase (SOD), and glutathione

peroxidase (GPx) levels already within the normal range.⁴ In vitro, **American ginseng root** (*P. quinquefolius*) root was found to support antioxidant activity as evidenced by DPPH and superoxide radical scavenging assays.¹⁷ In a mouse study, proteins from American ginseng root helped maintain MDA, SOD, and GPx already within the normal range.⁶ Schisandrins A and B from **schisandra berry** (*S. chinensis*) may help support antioxidant activity.^{18,19} Schisandrin B may help maintain ROS, MDA, SOD and glutathione levels already within the normal range, the latter two through Nrf2 pathways.²⁰

Neurological Support

Astragalus root (*Astragalus* spp.) may help support neurological health.¹¹ *A. mongholicus* may help support a healthy mood.²¹ In addition, *A. mongholicus* may also help maintain axonal and synaptic health, as seen in mice.²² **Rhodiola root** (*R. rosea*) contains rosin and salidroside which may help support neurological health.²³ Its root may help maintain MAPK levels already within the normal range and help support a healthy mood.^{23,24} In addition, rhodiola root may help support normal working memory and concentration during mental performance.^{25,26}

Schisandra berry (*S. chinensis*) has been used in traditional Chinese health practices to support healthy cognition and may help maintain neurotransmitters and BDNF already within the normal range.^{18,27} In a study with mice under unpredictable mild stress, schisandra berry helped support normal cognition and maintain a healthy mood.²⁷ Schisandrin B may be particularly helpful in neurological support.¹⁹ Schisandrin B may help maintain IL-1-beta and TNF-alpha already within the normal range.²⁸ Schisandrin B may also help maintain IL-6, PGE₂, and NO already within the normal range.²⁹

Athletic Support

Salidroside from **rhodiola root** (*R. rosea*) may help support normal exercise tolerance as well as exercise performance, for both aerobic and anaerobic exercise.^{4,30} In a study with mice, proteins from **American ginseng root** (*P. quinquefolius*) helped maintain blood lactate, serum urea nitrogen, and hepatic glycogen already within the normal range.⁶ **Schisandra berry** (*S. chinensis*) may help maintain normal muscle strength as well as lactate levels already within the normal range.^{31,32} Adaptogenic herbs,

by nature, are useful in athletic support due to facilitating normal adaptation to physical and mental exertion.⁷

Safety and Cautions

Astragalus root (*Astragalus* spp.) is generally well tolerated, and serious adverse effects are rare.³⁴ Astragalus root may theoretically interfere with cyclophosphamide, though animal studies are mixed.³⁴ It may theoretically interfere with immunosuppressants, due to immunostimulant effects.³⁴ Astragalus root may also, due to effects on sodium and water retention, increase levels and adverse effects of pharmaceutical lithium.³⁴

Rhodiola root (*R. rosea*) is generally well tolerated. The most common adverse effects are dizziness and dry mouth.³⁵ *R. rosea* may have additive effects with hypoglycemics affecting alpha-glucosidase levels.³⁵ It may also have additive effects with antihypertensives affecting angiotensin converting enzyme (ACE) levels.³⁵ Rhodiola root may increase levels of medications that are CYP2C9 substrates, and may have additive effects with losartan.³⁵ Theoretically, it may also increase the levels of P-glycoprotein substrates and may decrease the effects of immunosuppressants.³⁵

American ginseng root (*P. quinquefolius*) is generally well tolerated. Adverse effects may

include headaches.³⁶ American ginseng root should not be used concurrently with warfarin, as it may decrease its therapeutic effects.³⁶ It may have additive effects with hypoglycemic medications, may interfere with MAOIs, and may oppose the effects of immunosuppressants.³⁶

Schisandra berry (*S. chinensis*) is eaten as a food, and is generally well tolerated.³⁷ Adverse effects may include acid indigestion, stomach pain, decreased appetite, allergic skin rashes, and urticaria.³⁷ Schisandra berry may increase metabolism and decrease levels of warfarin, attributed to CYP2C9 metabolism.³⁷ It may decrease the bioavailability of talinolol, attributed to inhibition of the P-glycoprotein drug transporter.³⁷ Schisandra berry may increase the bioavailability of tacrolimus,³⁷ and may have additive effects with phenobarbital.³⁷ It may raise levels and increase the effects of midazolam, attributed to CYP3A4 inhibition.³⁷ Schisandra berry may induce CYP2C9 enzymes, inhibit CYP3A4 enzymes, and inhibit P-glycoprotein carrier protein.³⁷

Safety is not documented in breastfeeding or pregnant women, or in children under age 3, due to insufficient safety research.

*This statement has not been evaluated by the Food and Drug Administration. This product is not intended to treat, cure, or prevent any diseases.

References

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NutraMedix. 

SHAKE WELL BEFORE EACH USE:
Put 20 drops in 4 oz. of water and wait one minute before drinking. Take twice daily (10 minutes before breakfast and lunch) or as directed by your physician. Do not use if pregnant or nursing. Stop use if adverse reactions develop. Keep out of reach of children.

†These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.



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ADRENAL
STRESS MANAGEMENT/
ADRENAL SUPPORT †
Dietary Supplement
1 fl oz. (30mL)

Supplement Facts
Serving Size 20 drops
Servings Per Container 30

Amount Per Serving	
Proprietary Blend	1.0 mL*
Astragalus root extract, Rhodiola root extract, American Ginseng root extract, Schisandra berry extract	
*Daily Value not established	

Other ingredients: mineral water, ethanol (20-24%)

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VZ24383
Lot #
Exp.