

Herbs with Tonic, Adaptogenic, Adrenal Tonic & Nervine Activity

Withania

Withania somnifera root has been used in Ayurvedic medicine as a strengthening and rejuvenating tonic for all forms of weakness, fatigue, wasting and convalescing.¹ It is said to provide fresh energy and vigour for a system worn out by any constitutional disease² and to strengthen the nerves and promote restful sleep.¹ In Tibetan and South African traditional medicine Withania is regarded as a general tonic and nervine tonic.^{3,4}

Pharmacological studies have shown Withania has an adaptogenic activity,^{1,5} which is not surprising as Withania is also regarded in Ayurveda as a *rasayana* herb, and so promotes health, increases resistance of the body to stressors, revitalises the body in debilitated conditions and increases longevity.⁶ In this traditional system, Withania is also regarded as a *medharasayan* or promoter of learning and memory retrieval.⁷

In clinical trials Withania has:

- demonstrated tonic and growth building activity in children (8–12 years); dosage was 2 g/day;⁸
- improved haemoglobin, red blood cell count and sexual performance in healthy male patients aged 50 to 59 years; dosage was 3 g/day;⁹
- improved sleep patterns, responsiveness, alertness, state of awareness and physical capabilities in trainee mountaineers; dosage was 1 g/day.¹⁰

Licorice

Glycyrrhiza glabra root is well known for a wide range of activities and indications in several traditional medicine systems.¹¹

Glycyrrhiza glabra root contains triterpenoid saponins, especially glycyrrhizin (GL), present in the form of potassium and calcium salts.¹²

In the *British Herbal Pharmacopoeia* 1983 and the *British Herbal Compendium*, Licorice is described as an adrenal agent and adrenocorticotropic (which herbalists now regard as adrenal tonic) and indicated for primary adrenocortical insufficiency and Addison's disease.^{12,13}

(Addison's disease is an adrenal disease characterised by the progressive destruction of the adrenal cortex, resulting in insufficient production of aldosterone and hydrocortisone.)

Injection of GL in rats reduced the suppressive effect of cortisol on adrenocorticotrophic hormone (ACTH) synthesis, ACTH secretion and on adrenal weight. In a clinical study, oral administration of GL (150–300 mg/day) blocked the effect of dexamethasone in lowering the amount of urinary metabolites of cortisol as the result of pituitary (ACTH) inhibition.¹⁴

In the 1950s Licorice extract was found to be a successful medical treatment for some cases of Addison's disease. Patients could be maintained on 3–60 g/day of extract, the lower dosage used when the disease was controlled.¹⁵ In one case treated with an initially high dose of Licorice extract was dropped to a low maintenance dose. The doctor noted an increased sensitivity and cumulative action from Licorice.¹⁶ This suggests that Licorice may assist in the recuperation of the adrenal cortex.¹⁷

Licorice and cortisone was found to have a synergistic effect in several Addison's disease patients who had severely impaired adrenal cortex function. (Licorice had no effect on its own in these patients.)¹⁸ Licorice may aid the withdrawal of corticosteroid drugs and extend the pharmacological effects of steroid drugs.⁵

The adrenal cortex participates in the stress response through its production of glucocorticoids. Licorice may therefore support the adrenal cortex during the experience of prolonged stress and be a valuable component of treatment for recuperation after a particularly exhausting phase or disease.¹⁷

Glycyrrhizin, the main active saponin constituent of Licorice, is converted into glycyrrhetic acid (GA) in the intestine and absorbed. GA inhibits the activity of the enzyme 11 β -hydroxysteroid dehydrogenase type 2 in the kidney, which allows cortisol to bind to the mineralocorticoid receptors resulting in a hypermineralocorticoid state (and the well known side

effects of hypertension and hypokalaemia).¹⁹ Hence Licorice needs to be prescribed cautiously – avoid excessive doses. Patients who are prescribed Licorice preparations high in glycyrrhizin for prolonged periods should be placed on a high potassium and low sodium diet. They should be closely monitored for blood pressure increases and weight gain. Caution in the elderly and those with cardiac, renal or hepatic disease.^{5,20}

Like *Panax ginseng*, *Eleutherococcus senticosus* and *Astragalus membranaceus*, Licorice is regarded in traditional Chinese medicine (TCM) as a herb that tonifies the *qi*.²¹ (In TCM *G. uralensis*, *G. glabra* and *G. inflata* are medicinally-interchangeable species.²²) It may be prescribed for *Spleen qi* deficiency (eg weakness, appetite and weight loss), *pancreas* and *adrenal yin* deficiency (eg fatigue from overwork, stress or illness; as well as adrenal insufficiency and Addison's disease).²³ Licorice also moderates and harmonises the characteristics of other herbs. Because it is said to enter all twelve primary channels, it can lead and conduct other herbs into the channels.²¹

Skullcap

Scutellaria lateriflora aerial parts have been traditionally used to treat nervous tension and epilepsy.¹³ It was also used by Eclectic physicians for disorders arising from physical or mental overwork,²⁴ and for nervous prostration.²⁵ Skullcap was official in the *United States Pharmacopeia* 1863–1916, and the *National Formulary* 1916–1947, and listed as tonic, nervine and antispasmodic.²⁶

A contemporary view indicates that Skullcap may be beneficial for nervous tension due to chronic stress, illness or exhaustion; for fatigue or exhaustion, and neurasthenia from chronic stress or illness.²⁷

Historically herbal products containing Skullcap have been found to be adulterated, sometimes with the potentially toxic *Teucrium* spp. In addition, until about 2002 there was very little reliable information available about its constituents. Analytical methods have been developed and the characteristic phytochemical profile is now known.^{11,28} Practitioners are advised to use Skullcap products from manufacturers using this analytical methodology.

Korean Ginseng

Panax ginseng root has been used for a wide variety of indications across several traditional systems. In traditional Oriental medicine *Panax ginseng* root *tonifies the vital energy* and *spleen*, and is indicated for lethargy, to calm the nerves, chronic general weakness with irritability and insomnia.^{21,22,29} In western herbal medicine, Korean Ginseng is used as a tonic indicated for physical or mental exhaustion.^{12,30} In the former Soviet Union Korean Ginseng

has been used traditionally as a tonic and officially approved for use as an adaptogen.^{31,32}

The ginsenosides (which are triterpene saponins of the dammarane type) are key constituents of Korean Ginseng root,³⁰ but it is the particular combination of ginsenosides which are particularly important for the therapeutic activity. The ratio of ginsenoside Rg₁ to ginsenoside Rb₁, being greater than 0.5 is accepted as the marker of quality. However, it is also likely that other components found in the main root contribute significantly to the therapeutic activity.⁵

An analytical study published in 2001 suggested that ginseng products including *P. ginseng* for sale in the United States exhibited a marked variability in concentration of marker compounds. Levels of marker compounds differed significantly from labelled amounts and there was also significant product-to-product variability.³³

A large number of clinical trials have been conducted, and they tend to support the hypothesis that the tonic and adaptogenic activity of Korean Ginseng improves human performance and well being, although some trials have produced negative results.^{12,30} A common dosage, where defined, was extract equivalent to 1 g/day dried root, containing 4% ginsenosides.⁵ Reviews have concluded that many studies suffered from poor methodology, lack of controls, and no standardisation of the ginseng extracts used. However, Korean Ginseng may exert greater benefits on mental and physical performance for untrained or older volunteers.^{34,35}

In several trials conducted since these reviews Korean Ginseng (≥ 1 g/day dried root):

- improved aspects of mental health and social functioning in healthy volunteers compared to placebo, although the improvement reduced after 4 weeks;³⁶
- improved psychological test scores in postmenopausal women with symptoms of fatigue, insomnia and depression, compared to those without symptoms;³⁷
- improved general well-being in symptomatic postmenopausal women;³⁸
- improved erection in men with clinically diagnosed erectile dysfunction.³⁹

Synergistic Formulation

These herbs would complement each other in a very potent tonic and adaptogenic formulation providing adrenal support and nervine activity.

Indications

- Adrenal depletion.
- Chronic stress, especially when impacting on other systems – particularly the nervous and musculoskeletal systems.
- Chronic fatigue syndrome and fibromyalgia.

Cautions and Contraindications

Contraindicated in hypertension and oedema, caution is advised in patients taking cortisol or prednisolone, and in the elderly and those with cardiac, renal or hepatic disease due to Licorice.

Contraindicated in patients taking phenelzine due to Korean Ginseng. Caution is advised in patients taking sildenafil and warfarin.

Korean Ginseng is best not used during acute infections.

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