Glycyrrhiza glabra (Licorice root)

Source

Glycyrrhiza glabra is one of the saponin glycosides. It is the dried rhizome and roots of Glycyrrhiza glabra, and belongs to the Family Fabaceae. It contains a saponin-like glycoside, glycyrrhizin (glycyrrhizic acid, GA), which is 50 times as sweet as sugar. Glycyrrhizin (GL) is responsible for most of the beneficial effects of licorice. Supplements containing therapeutic amounts of licorice come in two forms: either with glycyrrhizin, or without glycyrrhizin, a form known as deglycyrrhizinated licorice, or DGL. Other constituents include flavonoid glycosides, (liquiritin, isoliquiritin, liquiritoside, isoliquiritoside, rhamnoliquiritin, and rhamnoisoliquiritin), coumarin derivatives (hericarpin and umbelliferone), asparagine, 22,23-dihydroxyisoflavanol, various plant estrogens (phytoestrogens), glucose, mannitol, and about 20% starch.

Mode of action for antiulcer effects

This appears to involve the ability of GL and GA to inhibit the enzymes 15-hydroxyprostaglandin dehydrogenase and D-13-prostaglandin reductase, which inactivate the protective prostaglandins (PG) in the gastric mucosa, particularly the PGE series (Endogenous PGs). The gastric mucosas of ulcer patients have been shown to be deficient in PGs, which is believed to play a role in the pathogenesis of peptic ulcers. By elevating the local concentration of selective PGs, licorice provides a protective effect against mucosal damage.

Potential uses

Main use (well documented):
- Oral Uses (DGL form): Ulcers, Heartburn (Eosophageal Reflux), Mouth Sores,
- Topical Uses (whole herb): Eczema, Psoriasis, Herpes,
- Oral Uses (whole herb): Cough, Asthma, Chronic Fatigue Syndrome (CFS).

Other possible uses (less well documented):
- Internal: Allergies, arthritis, adrenocortical insufficiency, bronchitis, chronic gastritis, hepatitis, hypoglycemia, hypotension, rheumatism, steroid drug withdrawal,
- External: Dental caries, aphthous stomatitis, and herpes simplex lesions.

Supporting evidence

In a clinical study in 70 patients, 70% healing of gastric and duodenal ulcers by carbenoxolone (a GA derivative) vs. 36% in the placebo group. Carbenoxolone-treated patients with reflux oesophagitis had an 82% improvement in 8 weeks and improved 50% faster than controls, who showed a 63% improvement. Side effects were minimized by small frequent doses (5 x 20 mg daily). Gastric ulcer responded better to 4-6 weeks of carbenoxolone (glycyrrhetinic acid derivative) than to placebo in a trial with 40 patients. Endoscopic examination in 32 cases of chronic duodenal ulceration treated with deglycyrrhizinated licorice tablets showed that healing of the ulceration had occurred.
Taking licorice with steroid medications, such as prednisone, may increase both their medicinal effects and their often undesirable side effects.

Pregnancy and lactation
Safety for either form of licorice in pregnant or nursing women has not been established. According to one report, licorice possesses significant estrogenic activity and, as such, shouldn’t be taken by pregnant women or women who have had breast cancer. In addition, an observational study found evidence that heavy licorice use might lead to risk of premature birth.

The safe dosage
- Solid Extract: (4:1) 250-500 mg three times daily. (Manufacturer’s preparations may vary).
- DGL Capsules: 1-3 caps. Three times daily. (Manufacturer’s preparations may vary; 300-380 mg/capsule is typical.)
- Tincture: (1:5) 5-15 ml. three times daily.
- Dried root: 1-4 g. three times daily. (Daily Maximum 12 g).

Treatment should not be continued longer than 4-6 weeks because of the known side effects.

References and further reading

Birth control patch receives FDA approval
Ortho-McNeil Pharmaceutical has announced US FDA approval for the first birth control patch, Ortho Evra (norelgestromin/ethinyl estradiol transdermal system). Ortho Evra is a thin patch that delivers continuous levels of the hormones norelgestromin and ethinyl estradiol through the skin and into the bloodstream. The patch is worn for one week at a time and is replaced on the same day of the week for three consecutive weeks. The fourth week is ‘patch-free.’ The patches can be worn on the buttocks, abdomen, upper torso (front or back, excluding the breasts), or upper outer arm and have demonstrated a low rate of detachment even while bathing, swimming, exercising or wearing it in humid conditions.

Allergan and EntreMed alliance for eye diseases
Allergan and EntreMed Inc. have entered into a five-year strategic alliance to develop and commercialise small molecule angiogenic inhibitors for treatment and prevention of eye conditions. Angiogenic inhibitors block the formation of blood vessels associated with over 80 different diseases. EntreMed’s Panzem (2-methoxyestradiol) is the first small molecule to be licensed, developed and marketed under this agreement. Allergan and EntreMed will co-develop Xigris to treat age-related macular degeneration, a leading cause of blindness as the result of bleeding from the rupture of new blood vessels that form under the retina. A key part of this alliance will be the assessment of OcuCel Pharmaceuticals’ novel drug delivery technology to provide localized administration of Xigris to the back of the eye.

Lilly receives FDA approval for Xigris
Eli Lilly and Company has announced that the US FDA has approved Xigris (drotrecogin alfa (activated)), a recombinant form of human Activated Protein C. Xigris is approved for the reduction of mortality in adult patients with severe sepsis (sepsis associated with acute organ dysfunction), who have a high risk of death. Eli Lilly plans to launch Xigris in the United States in early 2002. Post-approval trials will include a study of the efficacy of Xigris in adult patients with severe sepsis who have a lower risk of death and a study in pediatric patients with severe sepsis. Eli Lilly and Company has applied for regulatory approval of Xigris in Canada, the EU and Australia for the treatment of severe sepsis.