



Eyebright

Euphrasia officinalis

Common names

Eyebright grass, euphrasia

Family

Scrophulariaceae (figwort)

Part used

Aerial parts

Background and traditional uses

Eyebright, which derives its name from the Greek word 'euphrosyne' meaning 'gladness', is an annual plant growing 15-30cm high.¹⁻⁴ The therapeutically relevant above ground parts of the plant include the ribbed green leaves and abundant inflorescent flowers that are white and yellow with purple streaks.^{2,3}

Originating in Europe, the eyebright plant is odourless with a slightly bitter and salty taste,^{2,5} and has been used in western herbal medicine to cure 'all evils of the eye' since the 14th century.^{2,3}

Traditional uses of eyebright include topical and oral applications.^{3,6} Topical preparations include as a rinse, compress or bath for eye concerns such as conjunctivitis, blepharitis, irritation, inflammation and redness.^{3,6}

Orally, eyebright has been traditionally used for cold symptoms (nasal mucous membrane inflammation and catarrh, sore throat, coughs and sinusitis), hay fever, headaches, chronic sneezing, middle ear infections, and catarrhal concerns associated with measles and the intestinal tract.^{1,3,6,7}

Actions

Primary:^{3,7}

- Astringent
- Anticatarrrhal
- Mucous membrane tonic
- Anti-inflammatory

Secondary:^{1,8,9}

- Antioxidant
- Antibacterial
- Antifungal
- Antihyperglycaemic

Applications and indications

- For the symptomatic relief of conjunctivitis.^{3,7,10}
- To reduce upper respiratory tract symptoms of the common cold including catarrh, sore throat and sneezing.^{3,7}

Active constituents and pharmacodynamics

The iridoid glycosides and flavonoid constituent groups derived from the aerial parts of eyebright are the most therapeutically relevant, contributing to the herb's pharmacodynamic effects.³

The **iridoid glycoside** aucubin and its aglycone aucubigenin are currently the most studied constituents from eyebright.^{3,6} Other constituents include catalpol, euphroside, ixoroside, veronicoside, verproside, mussaenoside and ladroside.^{1,2,3,7} Pharmacodynamic properties associated with aucubin and aucubigenin are antimicrobial, anticatarrrhal, hepatoprotective, anti-inflammatory, antiviral, antifungal, spasmolytic and antitumour effects.^{2,3,7}

The main **flavonoid** constituents from the aerial parts of eyebright are apigenin, luteolin, kaempferol, rhamnetin, quercetin and their glycosides, as well as lignans. These constituents are known to have anti-inflammatory and antioxidant properties.¹⁻⁴

Less well studied constituents that are also found in eyebright include phenolic acids, caffeic acid and its ester derivatives (chlorogenic acids and coumaric acids), hydroxycinnamic derivatives and tannins.^{1,2}

Summary of clinical evidence

Eye health

Eyebright has a long history of use for a range of eye concerns and some clinical evidence indicates there is a scientific basis for these applications.

A prospective, open label, multicentre cohort trial aimed to assess the efficacy of eyebright when used topically for eye inflammation and catarrh.¹⁰ Subjects (n=65) with conjunctivitis were administered eyebright as an eye drop preparation for 14 days (one drop one to five times daily, equivalent to 100g of eyebright – no other extract details provided). Assessment parameters included the degree of severity of redness, swelling, secretions, burning of conjunctiva and foreign body sensation, conducted at baseline, and after seven and 14 days following treatment. At the end of the study, 81.5% (n=53) subjects had complete recovery from all symptoms while 17% (n=17) had clear improvement of symptom severity and frequency. Tolerability was assessed by subjects and the assessing doctors as 'good' to 'very good' in 85% of patients. Subsequent preliminary studies demonstrate the potential mechanisms underlying the beneficial effect of eyebright in improving conjunctivitis symptoms.

In an *in vitro* analysis assessing the effect of eyebright on human corneal epithelial cells, the extract reduced pro-inflammatory cytokine expression (interleukin [IL]-1 beta, IL-6, IL-10 and tumour necrosis factor-alpha [TNF-alpha]) over 24 hours.⁴



A separate preliminary study investigated the effect of a combination of eyebright and *Matricaria chamomilla* (chamomile) eye drops on human corneal epithelial cells.⁹ Following exposure to UVB radiation, the herbal eye drop preparation was observed to protect the corneal epithelial cells from UVB-induced apoptosis, improve wound healing, and reduce both oxidative damage and inflammatory mediator activity (COX-2 and IL-1 beta).

Dosage summary

Liquid extract (1:1): 15-30mL weekly

Liquid extract (1:2): 20-40mL weekly⁷

Tincture (1:5): 50-105mL weekly⁷

Topical eye rinse: 2-3g dried aerial parts, or 5-6 drops of 1:1 liquid extract, in boiled water. Allow to cool and filter before applying to affected area two to three times daily.^{1,3}

Safety information

- Category B - no increase in frequency of malformation or harmful effects on foetus from limited use during pregnancy. Eyebright is appropriate during breastfeeding according to available information.³
- Concomitant use with antidiabetic medication may theoretically lower blood glucose levels so caution is advised.⁶
- No other specific contraindications known.³
- Ensure topical eye rinses are sterile, and ensure all fluid extracts are diluted before applying to eye (due to ethanol content).^{3,6}

References

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