

Product Information

Psoralen

Product Number **P 8399**
Storage Temperature 2-8 °C

Product Description

Molecular Formula: C₁₁H₆O₃
Molecular Weight: 186.2
CAS Number: 66-97-7
Melting Point: 163-164 °C
Synonym: fucusin

Psoralens are naturally occurring substances that appear to serve a defensive role in some plants (*Psoralea sp.*). Psoralens have been detected in fruit, seeds, leaves, stems, and roots. Psoralens have antiviral, antibacterial, antifungal, and insecticide properties. Psoralens are also germination inhibitors. In some plants, seed germination occurs only after psoralens have been leached from the seeds into the soil. The released psoralens inhibit germination of surrounding seeds.¹⁻⁵

Psoralens are members of the furocoumarin family of tricyclic molecules with an extended aromatic system which gives rise to strong absorption at certain ultraviolet light wavelengths (220 - 400 nm). Light activated psoralens can participate in photochemical reactions.⁶

Psoralens cause light sensitization of human skin. Exposed individuals become vulnerable to unexpectedly intense sunburns. Psoralen photochemistry has been used to study DNA mutation and repair mechanisms. A photocycloaddition product is formed between pyrimidines (primarily thymidine) when a psoralen-DNA intercalation complex absorbs UV radiation.⁶⁻¹⁰

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in ethanol (10 mg/ml) with warming, yielding a clear, colorless to faint yellow solution.

References

1. Zobel, A. M., and Brown, S. A., Histological localization of furanocoumarins in *Ruta graveolens*. *Can. J. Bot.*, **67**, 915-921 (1989).
2. Nguyen, C., et al., Quantification of daidzein and furanocoumarin conjugates of *Psoralea cinerea* L. (*Leguminosae*). *Phytochem. Anal.*, **8**, 27-31 (1997).
3. Chaudhary, S. K., et al., Increased furanocoumarin content of celery during storage. *J. Agric. Food Chem.*, **33**, 1153-1157 (1985).
4. Zangerl, A., Furanocoumarin induction in wild parsnip: evidence for an induced defence against herbivores. *Ecology*, **71**, 1926-1932 (1990).
5. Baskin, J. M., et al., Psoralen, an inhibitor in the seeds of *Psoralea subacaulis* (*Leguminosae*). *Phytochemistry*, **6**, 1209-1213 (1967).
6. Edelson, R. L., Light activated drugs. *Sci. Am.*, **259(2)**, 68-75 (1988).
7. Innocenti, G., et al., Investigation on skin-photosensitizing activity of various kinds of *Psoralea*. *Planta Medica*, **31**, 151-155 (1977).
8. Laskin, J. D., Cellular and molecular mechanisms in photochemical sensitization: studies on the mechanism of action of psoralens. *Food Chem. Toxicol.*, **32(2)**, 119-127 (1994).
9. Dawe, R. S., et al., A randomized controlled trial of narrowband ultraviolet B vs. bath-psoralen plus ultraviolet A photochemotherapy for psoriasis. *Br. J. Dermatol.*, **148(6)**, 1194-1204 (2003).
10. Parsad, D., et al., SP-20 Repigmentation patterns and their co-relation with different treatment modalities, speed and stability of pigmentation in 352 vitiliginous patches. *Pigment Cell Res.*, **16(5)**, 587 (2003).

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.

