

Product Information

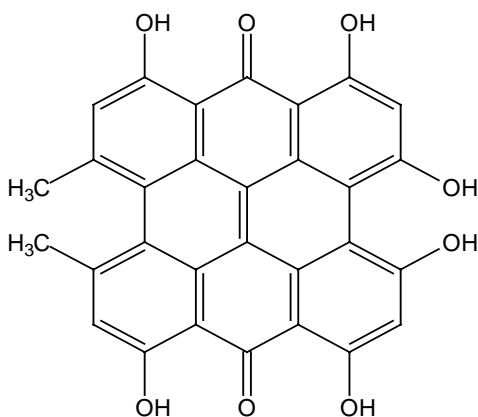
HYPERICIN

Product Number **H9252**
Storage Temperature RT

CAS #: 548-04-9

Synonyms:¹ 1,3,4,6,8,13-Hexahydroxy-10,11-dimethylphenanthro[1,10,9,8-opqra]perylene-7,14-dione; 4,5,7,4',5',7'-hexahydroxy-2,2'-dimethylnaphthodianthrone; hypericum red; Cyclo-Werrol (Werrol)

Product Description



Appearance: Black powder
Molecular formula: C₃₀H₁₆O₈
Molecular weight: 504.5

A polycyclic dione. This is a natural product, extracted from the plant St. John's wort, *Hypericum perforatum*.² An early isolation method, not necessarily used by Sigma's supplier, was reported.³ Hypericin has been synthetically produced by several methods.¹

Hypericin is a potent inhibitor of protein kinase C, with an IC₅₀ of 1.7 µg/mL.⁴ This property has made it useful in the study of cancer cell motility, invasion, proliferation, and apoptosis.⁵⁻⁷ It is also a potent antiviral agent, possessing activity against a wide range of envelope viruses and retroviruses.⁸ This activity is due to its photodynamic and lipophilic properties. It binds cell membranes and binds and cross-links virus capsid proteins.⁹ Its antiviral activity is completely dependent on the presence of light.¹⁰⁻¹³ Its ability to bind cell membranes and the fact that it fluoresces bright red¹ allows it to be used in fluorescence microscopy.¹⁴ Fluorescent excitation of hypericin has been shown to cause irreversible damage to cell membranes.¹⁴

HPLC System:¹⁵

Column: YMC C8 25 cm X 4.6 mm ID,
particle size 5 µm

Mobile phase: 0.1% phosphoric acid in mixture of
3 parts acetonitrile:1 part water

Flow rate: 1.5 mL/min

Solvent: methanol:pyridine (18:2), at 0.25 mg/mL

Volume injected: 10 µl

Detection: 588 nm

Retention time: between 4 to 5 minutes

Preparation Instructions

Sigma tests solubility in 1 N NaOH at 10 mg/mL, obtaining a very dark green solution. It has been solubilized in methanol at 0.3 mg/mL for HPLC purposes. It is somewhat soluble in (deuterated) DMSO, sufficient for NMR testing.² Hypericin is reported to be freely soluble in pyridine and other organic bases, yielding cherry-red solutions with red fluorescence. It is almost insoluble in most other organic solvents. Alkaline aqueous solutions below pH 11.5 are red; above pH 11.5 they are green with red fluorescence.¹

Solutions of 1-5 mg/mL have been prepared in absolute ethanol with sonication. "Solutions were further diluted to working stock solutions of 1, 10 and 100 µg/mL and kept in the dark until used. When protected from evaporation, shielded from light and subjected to resonication, the (hypericin) solution gave the same HPLC response factor for periods up to 6 months."¹⁶

Storage/Stability

The solid is stable at room temperature. Protect from light.

References

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