

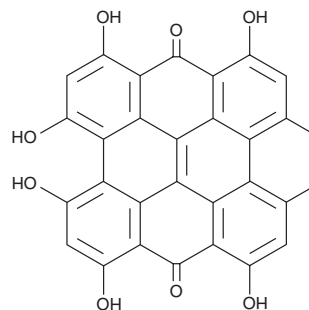
# PRODUCT INFORMATION



## Hypericin

Item No. 11334

**CAS Registry No.:** 548-04-9  
**Formal Name:** 1,3,4,6,8,13-hexahydroxy-10,11-dimethyl-phenanthro[1,10,9,8-opqra]perylene-7,14-dione  
**Synonym:** NSC 407313  
**MF:** C<sub>30</sub>H<sub>16</sub>O<sub>8</sub>  
**FW:** 504.5  
**Purity:** ≥95%  
**UV/Vis.:** λ<sub>max</sub>: 217, 286, 328, 385, 476, 511, 548, 591 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Hypericin is supplied as a crystalline solid. A stock solution may be made by dissolving the hypericin in the solvent of choice, which should be purged with an inert gas. Hypericin is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of hypericin in these solvents is approximately 30 mg/ml. Hypericin is also slightly soluble in ethanol.

Hypericin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, hypericin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Hypericin has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

An anthroquinone derivative that is naturally found in the flower of *H. perforatum* (St. John's wort) and has antidepressant, antiviral, and anti-cancer activities.<sup>1,2</sup> Hypericin inhibits neuronal uptake of serotonin, norepinephrine, dopamine, GABA and L-glutamate, contributing to its antidepressant effects.<sup>3</sup> It exerts broad spectrum phototoxic effects (IC<sub>50</sub> = 140-1,570 nM) through induction of apoptotic signaling and formation of reactive oxygen species (ROS) in cancer cells.<sup>4</sup> Hypericin also has *in vitro* activity, which can be enhanced with photo-activation, against a variety of viruses including HIV, influenza virus, hepatitis C, murine cytomegalovirus, and herpes viruses.<sup>5</sup>

### References

1. Wölfle, U., Seelinger, G., and Schempp, C.M. Topical application of St. John's wort (*Hypericum perforatum*). *Planta Med.* **80**(2-3), 109-120 (2014).
2. Jendželovská, Z., Jendželovský, R., Kuchárová, B., et al. Hypericin in the light and in the dark: Two sides of the same coin. *Front. Plant Sci.* **7**(560), (2016).
3. Butterweck, V., Christoffel, V., Nahrstedt, A., et al. Step by step removal of hyperforin and hypericin: Activity profile of different *Hypericum* preparations in behavioral models. *Life Sci.* **73**(5), 627-639 (2003).
4. Momekov, G.F., D., Zheleva-Dimitrova, D., Nedialkov, P., et al. Cytotoxic effects of hyperatomarin, a prenylated phloroglucinol from *Hypericum annulatum* Moris subsp. *annulatum*, in a panel of malignant cell lines. *Phytomedicine* **15**(11), 1010-1015 (2008).
5. Jacobson, J.M., Feinman, L., Liebes, L., et al. Pharmacokinetics, safety, and antiviral effects of hypericin, a derivative of St. John's wort plant, in patients with chronic hepatitis C virus infection. *Antimicrob. Agents and Chemother.* **45**(2), 517-524 (2001).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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