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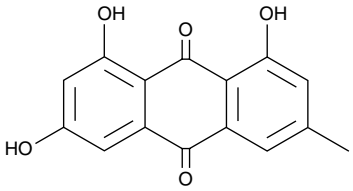
# Product Information

## Emodin

*Item No. 13109*

| | |
|---|---|
| **CAS Registry No.:** | 518-82-1 |
| **Formal Name:** | 1,3,8-trihydroxy-6-methyl-9,10-anthracenedione |
| **Synonyms:** | Archin, Frangulic Acid, NSC 408120, NSC 622947, Schuttgelb |
| **MF:** | $C_{15}H_{10}O_5$ |
| **FW:** | 270.2 |
| **Purity:** | ≥98% |
| **Stability:** | ≥2 years at -20°C |
| **Supplied as:** | A crystalline solid |
| **UV/Vis.:** | $\lambda_{max}$: 222, 252, 266, 290, 437 nm |




### Laboratory Procedures

For long term storage, we suggest that emodin be stored as supplied at -20°C. It should be stable for at least two years.

Emodin is supplied as a crystalline solid. A stock solution may be made by dissolving the emodin in the solvent of choice. Emodin is soluble in organic solvents such as DMSO and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of emodin in these solvents is approximately 3 and 5 mg/ml, respectively.

Emodin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, emodin should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Emodin has a solubility of approximately 0.03 mg/ml in a 1:30 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Emodin is a naturally-occurring anthraquinone found in a variety of plants used in traditional Chinese medicine. Purified emodin has diverse effects, including the suppression of inflammation, dyslipidemia, and cancer.[1-3] At a molecular level, emodin directly and selectively inhibits casein kinase II ($IC_{50}$ = 0.89 µM).[4,5] Through this action, it inhibits the COP9 signalosome, causing the stabilization of the tumor suppressor p53.[5] Moreover, emodin acts as a phytoestrogen, binding human estrogen receptors and blocking 17β-estradiol binding with $K_i$ values of 0.77 and 1.5 µM for ERα and ERβ, respectively.[6]

### References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2. Alisi, A., Pastore, A., Ceccarelli, S., *et al.* Emodin prevents intrahepatic fat accumulation, inflammation and redox status imbalance during diet-induced hepatosteatosis in rats. *Int. J. Mol. Sci.* **13**, 2276-2289 (2012).
3. Lin, S.-Z., Wei, W.-T., Chen, H., *et al.* Antitumor activity of emodin against pancreatic cancer depends on its dual role: Promotion of apoptosis and suppression of angiogenesis. *PLoS One* **7(8)**, 1-15 (2012).
4. Sarno, S., De Moliner, E., Ruzzene, M., *et al.* Biochemical and three-dimensional-structural study of the specific inhibition of protein kinase CK2 by [5-oxo-5,6-dihydroindolo-(1,2-a)quinazolin-7-yl]acetic acid (IQA). *Biochem. J.* **374**, 639-646 (2003).
5. Füllbeck, M., Huang, X., Dumdey, R., *et al.* Novel curcumin- and emodin-related compounds identified by in silico 2D/3D conformer screening induce apoptosis in tumor cells. *BMC Cancer* **5(97)**, 1-14 (2005).
6. Matsuda, H., Shimoda, H., Morikawa, T., *et al.* Phytoestrogens from the roots of *Polygonum cuspidatum* (Polygonaceae): Structure-requirement of hydroxyanthraquinones for estrogenic activity. *Bioorg. Med. Chem. Lett.* **11(14)**, 1839-1842 (2001).


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