

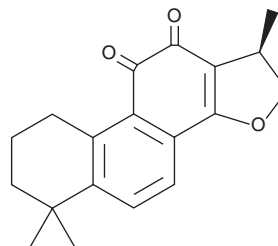
# PRODUCT INFORMATION



## Cryptotanshinone

Item No. 16987

**CAS Registry No.:** 35825-57-1  
**Formal Name:** (1R)-1,2,6,7,8,9-hexahydro-1,6,6-trimethyl-phenanthro[1,2-b]furan-10,11-dione  
**MF:** C<sub>19</sub>H<sub>20</sub>O<sub>3</sub>  
**FW:** 296.4  
**Purity:** ≥95%  
**UV/Vis.:** λ<sub>max</sub>: 220, 264, 271, 361, 439 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

Cryptotanshinone is supplied as a crystalline solid. A stock solution may be made by dissolving the cryptotanshinone in the solvent of choice, which should be purged with an inert gas. Cryptotanshinone is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of cryptotanshinone in these solvents is approximately 0.25 and 1 mg/ml, respectively.

### Description

Cryptotanshinone is a natural quinoid diterpene first isolated from *Salvia miltiorrhiza* roots, which are used in traditional Chinese medicine for a variety of conditions.<sup>1</sup> Cryptotanshinone, at 10-20 μM, stimulates AMP-activated protein kinase in C2C12 myotubes and activates p38 MAPK in DU145 cells.<sup>2,3</sup> It inhibits the protein tyrosine phosphatase SHP2 *in vitro* (IC<sub>50</sub> = 22.5 μM) and, at 4-8 μM, blocks phosphorylation of STAT3 in MC-3 cells.<sup>4,5</sup> Cryptotanshinone has a variety of anti-cancer actions, including inhibition of cell proliferation, induction of apoptosis, and reduction in angiogenesis.<sup>1,5,6</sup> However, it is poorly absorbed and has low bioavailability *in vivo*.<sup>6</sup>

### References

1. Chen, W., Lu, Y., Chen, G., *et al.* Molecular evidence of cryptotanshinone for treatment and prevention of human cancer. *Anticancer Agents Med. Chem.* **13(7)**, 979-987 (2013).
2. Kim, E.J., Jung, S.N., Son, K.H., *et al.* Antidiabetes and antiobesity effect of cryptotanshinone via activation of AMP-activated protein kinase. *Mol. Pharmacol.* **72(1)**, 62-72 (2007).
3. Chen, W., Liu, L., Luo, Y., *et al.* Cryptotanshinone activates p38/JNK and inhibits Erk1/2 leading to caspase-independent cell death in tumor cells. *Cancer Prev. Res. (Phila)* **5(5)**, 778-787 (2012).
4. Liu, W., Yu, B., Xu, G., *et al.* Identification of cryptotanshinone as an inhibitor of oncogenic protein tyrosine phosphatase SHP2 (PTPN11). *J. Med. Chem.* **56(18)**, 7212-7221 (2013).
5. Yu, H.J., Park, C., Kim, S.J., *et al.* Signal transducer and activators of transcription 3 regulates cryptotanshinone-induced apoptosis in human mucoepidermoid carcinoma cells. *Pharmacogn. Mag.* **10(Suppl 3)**, S622-S629 (2014).
6. Zhang, Y., Jiang, P., Ye, M., *et al.* Tanshinones: Sources, pharmacokinetics and anti-cancer activities. *Int. J. Mol. Sci.* **13(10)**, 13621-13666 (2012).

#### 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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