

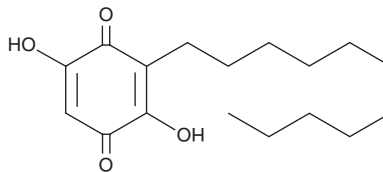
PRODUCT INFORMATION



Embelin

Item No. 11838

CAS Registry No.: 550-24-3
Formal Name: 2,5-dihydroxy-3-undecyl-2,5-cyclohexadiene-1,4-dione
Synonym: NSC 91874
MF: C₁₇H₂₆O₄
FW: 294.4
Purity: ≥95%
UV/Vis.: λ_{max}: 289 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

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

Embelin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, embelin should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Embelin has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Embelin is a benzoquinone that has been found in *E. ribes* and has diverse biological activities.¹ It inhibits viral replication of the influenza A subtype H1N1 and the influenza B subtype Victoria-like in MDCK cells (IC₅₀s = 0.3 and 0.2 μM, respectively).² It is also an inhibitor of X-linked inhibitor of apoptosis (XIAP; IC₅₀ = 4.1 μM in a fluorescence polarization assay).³ Embelin (20-50 μM) induces apoptosis and increases caspase-9 levels in PC3 prostate cancer cells. It completely inhibits TNF-α-induced NF-κB and IκB kinase (IKK) activation and inhibits TNF-α-induced IκBα phosphorylation in KBM5 human myeloid cells when used at a concentration of 50 μM.¹ It is active against the Gram-positive bacteria *B. subtilis*, *S. aureus*, and *M. luteus* (MICs = 20, 20, and 25 μg/ml, respectively) and the Gram-negative bacteria *P. aeruginosa*, *K. pneumoniae*, and *E. coli* (MICs = 25, 25, and 45 μg/ml, respectively).⁴

References

1. Ahn, K.S., Sethi, G., and Aggarwal, B.B. Embelin, an inhibitor of X chromosome-linked inhibitor-of-apoptosis protein, blocks nuclear factor-κB (NF-κB) signaling pathway leading to suppression of NF-κB-regulated antiapoptotic and metastatic gene products. *Mol. Pharmacol.* **71(1)**, 209-219 (2007).
2. Hossan, M.S., Fatima, A., Rahmatullah, M., et al. Antiviral activity of *Embelia ribes* Burm. f. against influenza virus *in vitro*. *Arch. Virol.* **163(8)**, 2121-2131 (2018).
3. Nikolovska-Coleska, Z., Xu, L., Hu, Z., et al. Discovery of embelin as a cell-permeable, small-molecular weight inhibitor of XIAP through structure-based computational screening of a traditional herbal medicine three-dimensional structure database. *J. Med. Chem.* **47(10)**, 2430-2440 (2004).
4. Radhakrishnan, N., Gnanamani, A., and Mandal, A.B. A potential antibacterial agent embelin, a natural benzoquinone extracted from *Embelia ribes*. *Biol. Med.* **3(2)**, 1-7 (2011).

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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