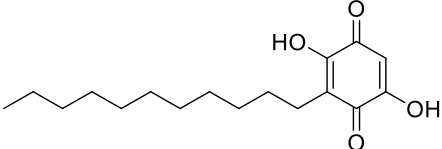


Product data sheet



MedKoo Cat#: 406634 Name: Embelin CAS#: 550-24-3 Chemical Formula: C ₁₇ H ₂₆ O ₄ Exact Mass: 294.18311 Molecular Weight: 294.39		
Product supplied as:	Powder	
Purity (by HPLC):	≥ 98%	
Shipping conditions	Ambient temperature	
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

1. Product description:

Embelin is the only known non-peptide small-molecule X-linked inhibitor of the apoptosis protein (XIAP) - an anti-apoptotic protein considered a promising cancer therapeutic target. Embelin acts as an NF-κB blocker and potential suppressor of tumorigenesis. It also exhibits potent cytotoxic, antioxidant and cancer chemopreventive effects. Given the potential uses of embelin, it is recommended that further investigations take place to properly explore its pharmacological and clinical effects.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	35.36	120.11
DMF	5.0	16.98
DMF:PBS (pH 7.2) (1:1)	0.5	1.70
Ethanol	7.47	25.37

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.40 mL	16.98 mL	33.97 mL
5 mM	0.68 mL	3.40 mL	6.79 mL
10 mM	0.34 mL	1.70 mL	3.40 mL
50 mM	0.07 mL	0.34 mL	0.68 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

- Liang YH, Wu JM, Teng JW, Hung E, Wang HS. Embelin downregulated cFLIP in breast cancer cell lines facilitate anti-tumor effect of IL-1β-stimulated human umbilical cord mesenchymal stem cells. Sci Rep. 2021 Jul 19;11(1):14720. doi: 10.1038/s41598-021-94006-w. PMID: 34282169; PMCID: PMC8289868.
- Reis-Silva CSM, Branco PC, Lima K, Silva FL, Moreno PRH, Guallar V, Costa-Lotufo LV, Machado-Neto JA. Embelin potentiates venetoclax-induced apoptosis in acute myeloid leukemia cells. Toxicol In Vitro. 2021 Jul 1;76:105207. doi: 10.1016/j.tiv.2021.105207. Epub ahead of print. PMID: 34216723.

In vivo study

- Hoda U, Jain S, Samim M, Jain GK, Agarwal NB. Embelin ameliorates cognitive dysfunction and progression of kindling in pentylenetetrazol-induced kindling in mice by attenuating brain inflammation. Epilepsy Behav. 2021 Mar;116:107788. doi: 10.1016/j.yebeh.2021.107788. Epub 2021 Feb 10. PMID: 33581600.

Product data sheet



2. Nakajima K, Ino Y, Yamazaki-Itoh R, Naito C, Shimasaki M, Takahashi M, Esaki M, Nara S, Kishi Y, Shimada K, Hiraoka N. IAP inhibitor, Embelin increases VCAM-1 levels on the endothelium, producing lymphocytic infiltration and antitumor immunity. *Oncoimmunology*. 2020 Oct 27;9(1):1838812. doi: 10.1080/2162402X.2020.1838812. PMID: 33178497; PMCID: PMC7595596.

7. Bioactivity

Biological target:

Embelin (Embelic acid), a potent, nonpeptidic XIAP inhibitor (IC₅₀=4.1 μ M), inhibits cell growth, induces apoptosis, and activates caspase-9 in prostate cancer cells with high levels of XIAP.

In vitro activity

This study used an MTT assay to examine the cytotoxic impact of embelin within 0 to 100 μ M concentration range for 24 and 48 h on three breast cancer cell lines MDA-MB-231, MCF-7, and MDA-MB-453. The results of treatment for 24 and 48 h showed that three breast cancer cell lines exhibited dose-dependent cytotoxicity in 0 to 50 μ M treatment of embelin.

Reference: *Sci Rep*. 2021; 11: 14720. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8289868/>

In vivo activity

Embelin (EMB) treatment increased the seizure threshold to hind limb extension (HLE) in the ICES test and decreased the seizure scores in the kindling experiment. Significantly low levels of IL-1 β , IL-1Ra, IL-6, and TNF- α were observed in the hippocampus of PTZ + EMB (10 and 20 mg/kg)-treated mouse groups compared with PTZ+ vehicle-treated group.

Reference: *Epilepsy Behav*. 2021 Mar;116:107788. <https://pubmed.ncbi.nlm.nih.gov/33581600/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.