

Product data sheet



MedKoo Cat#: 464836 Name: Gossypin CAS: 652-78-8 Chemical Formula: C ₂₁ H ₂₀ O ₁₃ Exact Mass: 480.0904 Molecular Weight: 480.378	
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:

Gossypin is a flavonoid glycoside originally isolated from *H. vitifolius* that has diverse biological activities. It inhibits RANKL-induced osteoclastogenesis in RAW 264.7 cells when used at a concentration of 5 μM. Gossypin inhibits Aurora B kinase (IC₅₀ = 11.07 μM in a cell-free assay using the human enzyme), as well as Aurora A kinase and p90 ribosomal S6 kinase 2 (RSK2) at 20 μM. It induces cell cycle arrest at the G2/M phase and apoptosis in HGC-27 gastric cancer cells. Gossypin decreases lactate dehydrogenase (LDH) release induced by the glutathione-depleting agent D,L-buthionine (S,R)-sulfoximine in primary rat cortical cells (IC₅₀ = 7.4 μg/ml). It reduces acetic acid-induced writhing in mice, an effect that can be reversed by the opioid antagonist naloxone, in a dose-dependent manner.

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
DMF	30.0	62.45
DMF:PBS (pH 7.2) (1:2)	0.3	0.62
DMSO	137.5	286.23

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.08 mL	10.41 mL	20.82 mL
5 mM	0.42 mL	2.08 mL	4.16 mL
10 mM	0.21 mL	1.04 mL	2.08 mL
50 mM	0.04 mL	0.21 mL	0.42 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

1. Wang L, Wang X, Chen H, Zu X, Ma F, Liu K, Bode AM, Dong Z, Kim DJ. Gossypin inhibits gastric cancer growth by direct targeting of AURKA and RSK2. *Phytother Res.* 2019 Mar;33(3):640-650. doi: 10.1002/ptr.6253. Epub 2018 Dec 10. PMID: 30536456; PMCID: PMC6416069.
2. Kunnumakkara AB, Nair AS, Ahn KS, Pandey MK, Yi Z, Liu M, Aggarwal BB. Gossypin, a pentahydroxy glucosyl flavone, inhibits the transforming growth factor beta-activated kinase-1-mediated NF-kappaB activation pathway, leading to potentiation of apoptosis, suppression of invasion, and abrogation of osteoclastogenesis. *Blood.* 2007 Jun 15;109(12):5112-21. doi: 10.1182/blood-2007-01-067256. Epub 2007 Mar 1. Erratum in: *Blood.* 2013 Aug 15;122(7):1327-8. PMID: 17332240; PMCID: PMC1890830.

In vivo study

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1. Cheng G, Zhang J, Jia S, Feng P, Chang F, Yan L, Gupta P, Wu H. Cardioprotective Effect of Gossypin Against Myocardial Ischemic/Reperfusion in Rats via Alteration of Oxidative Stress, Inflammation and Gut Microbiota. *J Inflamm Res.* 2022 Mar 5;15:1637-1651. doi: 10.2147/JIR.S348883. PMID: 35282267; PMCID: PMC8906873.
2. Mohamed M, El Sheikh AK, Mohammed HH. Modulation of Liver P-Glycoprotein Expression May Contribute to Gossypin Protection against Methotrexate-Induced Hepatotoxicity. *Indian J Pharmacol.* 2021 Jan-Feb;53(1):25-30. doi: 10.4103/ijp.IJP_824_19. PMID: 33975996; PMCID: PMC8216128.

7. Bioactivity

Biological target:

Gossypin inhibits NF- κ B and NF- κ B-regulated gene expression. Gossypin inhibits RANKL-induced osteoclastogenesis both in mouse primary bone marrow cells and RAW 264.7 cells in vitro.

In vitro activity

Results showed that growth of gastric cancer cells was significantly inhibited by gossypin treatment in a dose dependent manner (Fig. 1B, C). Additionally, this study investigated the effect of gossypin on cell migration and data indicated that gossypin significantly suppressed migration (Fig. 1D).

Reference: *Phytother Res.* 2019 Mar;33(3):640-650. <https://pubmed.ncbi.nlm.nih.gov/30536456/>

In vivo activity

ISO-induced I/R group rats exhibited the increased level of TNF- α , IL-1 β , IL-6 in the serum and heart tissue. Gossypin significantly ($P < 0.001$) suppressed the level of inflammatory cytokines in the serum and heart tissue (Figure 10).

Reference: *J Inflamm Res.* 2022 Mar 5;15:1637-1651. <https://pubmed.ncbi.nlm.nih.gov/35282267/>

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.