

Product data sheet



MedKoo Cat#: 585269 Name: Gastrodin CAS#: 62499-27-8 Chemical Formula: C ₁₃ H ₁₈ O ₇ Exact Mass: 286.1053 Molecular Weight: 286.28	
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:

Gastrodin is a phenolic glycoside that can penetrate through the blood-brain barrier and has been suggested to have neuroprotective effects against hypoxia.

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	104.79
DMSO	60.0	209.59
PBS (pH 7.2)	5.0	17.47
Water	100.0	349.31

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.49 mL	17.47 mL	34.93 mL
5 mM	0.70 mL	3.49 mL	6.99 mL
10 mM	0.35 mL	1.75 mL	3.49 mL
50 mM	0.07 mL	0.35 mL	0.70 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

- Li S, Yang Q, Zhou Z, Yang X, Liu Y, Hao K, Fu M. Gastrodin protects retinal ganglion cells from ischemic injury by activating phosphatidylinositol 3-kinase/protein kinase B/nuclear factor erythroid 2-related factor 2 (PI3K/AKT/Nrf2) signaling pathway. *Bioengineered*. 2022 May;13(5):12625-12636. doi: 10.1080/21655979.2022.2076499. PMID: 35609324; PMCID: PMC9275977.
- Jiang T, Chu J, Chen H, Cheng H, Su J, Wang X, Cao Y, Tian S, Li Q. Gastrodin Inhibits H₂O₂-Induced Ferroptosis through Its Antioxidative Effect in Rat Glioma Cell Line C6. *Biol Pharm Bull*. 2020;43(3):480-487. doi: 10.1248/bpb.b19-00824. PMID: 32115506.

In vivo study

- Fasina OB, Wang J, Mo J, Osada H, Ohno H, Pan W, Xiang L, Qi J. Gastrodin From *Gastrodia elata* Enhances Cognitive Function and Neuroprotection of AD Mice via the Regulation of Gut Microbiota Composition and Inhibition of Neuron Inflammation. *Front Pharmacol*. 2022 Jun 2;13:814271. doi: 10.3389/fphar.2022.814271. PMID: 35721206; PMCID: PMC9201506.
- Wang JW, Liu YM, Zhao XF, Zhang H. Gastrodin protects retinal ganglion cells through inhibiting microglial-mediated neuroinflammation in an acute ocular hypertension model. *Int J Ophthalmol*. 2017 Oct 18;10(10):1483-1489. doi: 10.18240/ijo.2017.10.01. PMID: 29062764; PMCID: PMC5638966.

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7. Bioactivity

Biological target:

Gastrodin, a main constituent of a Chinese herbal medicine Tianma, has been known to display anti-inflammatory effects.

In vitro activity

Treatment with gastrodin attenuated H₂O₂-induced ferroptosis and decreased lipid reactive oxygen species (ROS) (C11-BODIPY) production in C6 cells. Moreover, gastrodin increased the protein expression of nuclear factor erythroid 2-related factor 2 (Nrf2), GPX4, ferroportin-1 (FPN1), and heme oxygenase-1 (HO-1) in C6 cells treated with H₂O₂.

Reference: Biol Pharm Bull. 2020;43(3):480-487. <https://pubmed.ncbi.nlm.nih.gov/32115506/>

In vivo activity

Intraperitoneal injection with gastrodin 10 mg/kg or 50 mg/kg once daily for 15d significantly inhibited the loss of RGCs because of AOH damage (Figure 1D, 1E). Compared to the NS group, the density of the RGCs increased to 937.4±141.7 cells/mm² and 1031±179.2 cells/mm², respectively (Figure 1F). These results indicated that systemic gastrodin had a neuroprotective effect on RGCs in the AOH animal model.

Reference: Int J Ophthalmol. 2017 Oct 18;10(10):1483-1489. <https://pubmed.ncbi.nlm.nih.gov/29062764/>

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.