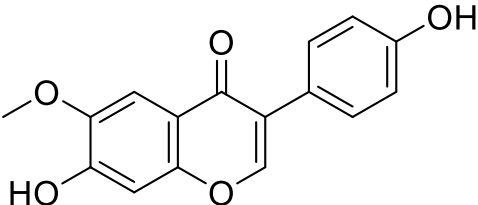# Product data sheet

MedKoo Cat#: 540183
Name: Glycitein
CAS: 40957-83-3
Chemical Formula: $C_{16}H_{12}O_5$
Exact Mass: 284.0685
Molecular Weight: 284.267

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:

Glycitein is found in soy and red clover. It exhibits a variety of biological activities, including increasing Nrf2-related antioxidative signaling, preventing invasion in glioma cells destabilizing amyloid-β aggregates and preventing fibril assembly, and inhibiting osteoclast generation.

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	27.17	95.57
DMF	0.5	1.76

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.52 mL	17.59 mL	35.18 mL
5 mM	0.70 mL	3.52 mL	7.04 mL
10 mM	0.35 mL	1.76 mL	3.52 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

1. Dong N, Yang Z. Glycitein exerts neuroprotective effects in Rotenone-triggered oxidative stress and apoptotic cell death in the cellular model of Parkinson's disease. Acta Biochim Pol. 2022 Jun 12;69(2):447-452. doi: 10.18388/abp.2020_5963. PMID: 35691030.
2. Zhang B, Su JP, Bai Y, Li J, Liu YH. Inhibitory effects of O-methylated isoflavone glycitein on human breast cancer SKBR-3 cells. Int J Clin Exp Pathol. 2015 Jul 1;8(7):7809-17. PMID: 26339345; PMCID: PMC4555673.

In vivo study

1. Gutierrez-Zepeda A, Santell R, Wu Z, Brown M, Wu Y, Khan I, Link CD, Zhao B, Luo Y. Soy isoflavone glycitein protects against beta amyloid-induced toxicity and oxidative stress in transgenic Caenorhabditis elegans. BMC Neurosci. 2005 Aug 25;6:54. doi: 10.1186/1471-2202-6-54. PMID: 16122394; PMCID: PMC1215487.
2. Pan W, Ikeda K, Takebe M, Yamori Y. Genistein, daidzein and glycitein inhibit growth and DNA synthesis of aortic smooth muscle cells from stroke-prone spontaneously hypertensive rats. J Nutr. 2001 Apr;131(4):1154-8. doi: 10.1093/jn/131.4.1154. PMID: 11285318.

7. Bioactivity

Product data sheet

Biological target:

Glycitein is a soybean (yellow cultivar) isoflavonoid; used in combination with other isoflavonoids such as genistein and daidzein to study apoptosis and anti-oxidation processes.

In vitro activity

The apoptotic SK-N-SH cell per-centage was 21% relative at 100 nM dosage of rotenone. Glycitein at 5 μM treatment reduced the rotenone-induced apoptosis to 13%. At 10 μM dosage of the glycitein, the apoptosis decreased to 5.7% (Fig. 6A). The western blot analysis showed that glycitein treatment caused a decrease in a rotenone triggered upregulation of Bax and caspase-3 expression (Fig. 6B).

Reference: Acta Biochim Pol. 2022 Jun 12;69(2):447-452. https://pubmed.ncbi.nlm.nih.gov/35691030/

In vivo activity

Figure 2A demonstrates that the levels of ROS in the C. elegans CL2006 fed with glycitein for 36 h were reduced (control $100 \pm 23\%$, glycitein $68.9 \pm 7\%$, n = 3, p = 0.05). These results suggest the decreased Aβ toxicity by glycitein might be, in part, a consequence of its antioxidative action.

Reference: BMC Neurosci. 2005 Aug 25;6:54. https://pubmed.ncbi.nlm.nih.gov/16122394/

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.