

Product data sheet



MedKoo Cat#: 540270 Name: Gamolenic acid CAS: 506-26-3 Chemical Formula: C ₁₈ H ₃₀ O ₂ Exact Mass: 278.2246 Molecular Weight: 278.436		
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:

Gamolenic acid is an omega-6 fatty acid PPAR agonist found in vegetable oils. It is a precursor to prostaglandin E1 and eicsapentaenoic acid. It regulates insulin secretion, inhibits diabetes mellitus-induced albuminuria, and induces apoptosis in leukemia cells.

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	100.0	359.15

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.59 mL	17.96 mL	35.92 mL
5 mM	0.72 mL	3.59 mL	7.18 mL
10 mM	0.36 mL	1.80 mL	3.59 mL
50 mM	0.07 mL	0.36 mL	0.72 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. Chen CY, Wu CH, Wu KC, Shiao LR, Chuang CM, Leung YM, Chow LWC. A basal level of γ -linolenic acid depletes Ca²⁺ stores and induces endoplasmic reticulum and oxidative stresses to cause death of breast cancer BT-474 cells. *Chin J Physiol.* 2021 Jul-Aug;64(4):202-209. doi: 10.4103/cjp.cjp_30_21. PMID: 34472451.
2. Wang Y, Shi J, Gong L. Gamma linolenic acid suppresses hypoxia-induced gastric cancer cell growth and epithelial-mesenchymal transition by inhibiting the Wnt/b-catenin signaling pathway. *Folia Histochem Cytobiol.* 2020;58(2):117-126. doi: 10.5603/FHC.a2020.0012. Epub 2020 Jul 1. PMID: 32608501.

In vivo study

1. Rengachar P, Bhatt AN, Polavarapu S, Veeramani S, Krishnan A, Sadananda M, Das UN. Gamma-Linolenic Acid (GLA) Protects against Ionizing Radiation-Induced Damage: An In Vitro and In Vivo Study. *Biomolecules.* 2022 Jun 7;12(6):797. doi: 10.3390/biom12060797. PMID: 35740923; PMCID: PMC9221136.
2. Cui H, Han F, Zhang L, Wang L, Kumar M. Gamma linolenic acid regulates PHD2 mediated hypoxia and mitochondrial apoptosis in DEN induced hepatocellular carcinoma. *Drug Des Devel Ther.* 2018 Dec 13;12:4241-4252. doi: 10.2147/DDDT.S178519. PMID: 30587920; PMCID: PMC6296206.

7. Bioactivity

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Biological target:

Gamma-linolenic acid (γ -Linolenic acid) is an omega-6 (n-6), 18 carbon (18C-) polyunsaturated fatty acid (PUFA) extracted from human milk and several botanical seed oils.

In vitro activity

GLA (gamma-linolenic acid) at 30 μ M, a concentration reportedly within the range of circulating concentrations in clinical studies, caused apoptotic cell death. GLA caused an elevation in mitochondrial Ca^{2+} level and a decrease in mitochondrial membrane potential. GLA treatment depleted cyclopiazonic acid (CPA)-sensitive Ca^{2+} store and triggered substantial Ca^{2+} influx.

Reference: Chin J Physiol. 2021 Jul-Aug;64(4):202-209. <https://pubmed.ncbi.nlm.nih.gov/34472451/>

In vivo activity

The initial study revealed that of all the fatty acids tested, GLA was the most effective in protecting the animals from radiation-induced mortality (see Figure 9 for the protocol of the studies; the protocol is shown for GLA only, and the same protocol was used for studying the effect of other fatty acids, including LXA4).

Reference: Biomolecules. 2022 Jun 7;12(6):797. <https://pubmed.ncbi.nlm.nih.gov/35740923/>

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.