

Product data sheet



MedKoo Cat#: 540283 Name: Meglumine CAS: 6284-40-8 Chemical Formula: C ₇ H ₁₇ NO ₅ Exact Mass: 195.1107 Molecular Weight: 195.215	
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:

Meglumine is an amino sugar and sorbitol derivative used as a bulking agent in the formulation of pharmaceutical drugs.

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	24.5	125.50
Water	44.5	227.95

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	5.12 mL	25.61 mL	51.23 mL
5 mM	1.02 mL	5.12 mL	10.25 mL
10 mM	0.51 mL	2.56 mL	5.12 mL
50 mM	0.10 mL	0.51 mL	1.02 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. Fernández OL, Ramírez LG, Díaz-Varela M, Tacchini-Cottier F, Saravia NG. Neutrophil Activation: Influence of Antimony Tolerant and Susceptible Clinical Strains of *L. (V.) panamensis* and Meglumine Antimoniate. *Front Cell Infect Microbiol.* 2021 Sep 22;11:710006. doi: 10.3389/fcimb.2021.710006. PMID: 34631596; PMCID: PMC8493214.
2. de Souza ALR, Fonseca M, Ferreira LMB, Kurokawa SSS, Kiill CP, Ferreira NN, Dos Santos Pyrrho A, Sarmiento VHV, Silva AM, Gremião MPD, Ribeiro CA. Meglumine-based supra-amphiphile self-assembled in water as a skin drug delivery system: Influence of unfrozen bound water in the system bioadhesiveness. *Colloids Surf B Biointerfaces.* 2019 Dec 1;184:110523. doi: 10.1016/j.colsurfb.2019.110523. Epub 2019 Sep 23. PMID: 31634799.

In vivo study

1. Niu XQ, Li DD, Bao YJ, Yang Q, Liu YK, Lu F, Yan JZ, Yin XH, Li C. Neuroprotective effect of meglumine cyclic adenylate against ischemia/reperfusion injury via STAT3-Ser727 phosphorylation. *J Stroke Cerebrovasc Dis.* 2023 Jan;32(1):106892. doi: 10.1016/j.jstrokecerebrovasdis.2022.106892. Epub 2022 Nov 17. PMID: 36402093.
2. Cardoso JMO, Brito RCF, Mathias FAS, Reis LES, Vieira JFP, Ostolin TLVDP, Andrade HM, Ramos GS, Frézard F, Aguiar-Soares RDO, Roatt BM, Reis AB. Comparative evaluation of meglumine antimoniate encapsulated in a mixture of conventional and PEGylated liposomes and immunotherapy using an anti-canine IL-10 receptor-blocking monoclonal antibody on canine visceral leishmaniasis. *Mol Immunol.* 2022 Jan;141:70-78. doi: 10.1016/j.molimm.2021.11.011. Epub 2021 Nov 20. PMID: 34814056.

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7. Bioactivity

Biological target:

Meglumine (Methylglucamine) is an amino sugar derived from sorbitol.

In vitro activity

Meglumine-oleic acid (MEG-OA) was arranged as hexagonal liquid crystals at 30-70 wt% water content, probably due to its curvature and increased water solubility. Meglumine-stearic acid (MEG-SA) at 10-80 wt% water content self-assembled as a lamellar polymeric network, which can be explained by the low mobility of MEG-SA in water due to hydrophobic interactions between fatty acid chains and H-bonds between meglumine and water molecules.

Reference: Colloids Surf B Biointerfaces. 2019 Dec 1;184:110523. <https://pubmed.ncbi.nlm.nih.gov/31634799/>

In vivo activity

Male Sprague-Dawley rats were subjected to 15 min global cerebral ischemia, and meglumine cyclic adenylate was treated through tail intravenous injection 30 min before ischemia. Pretreatment with meglumine cyclic adenylate not only significantly ameliorated neuron loss in CA1 region after global cerebral ischemia but also enhanced STAT3-Ser727 phosphorylation, increased mitochondrial STAT3, and decreased cytosolic Cyt c and active caspase-3.

Reference: J Stroke Cerebrovasc Dis. 2023 Jan;32(1):106892. <https://pubmed.ncbi.nlm.nih.gov/36402093/>

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.