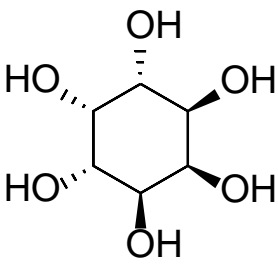


# Product data sheet



MedKoo Cat#: 330153 Name: Myo-Inositol CAS: 87-89-8 Chemical Formula: C <sub>6</sub> H <sub>12</sub> O <sub>6</sub> Exact Mass: 180.0634 Molecular Weight: 180.156		
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:

Myo-Inositol or simply inositol, is a carbocyclic sugar that is abundant in brain and other mammalian tissues, mediates cell signal transduction in response to a variety of hormones, neurotransmitters and growth factors and participates in osmoregulation. It is a sugar alcohol with half the sweetness of sucrose (table sugar). It is made naturally in human beings from glucose. Each kidney makes 2g a day; so 4g a day total is made. Other tissues synthesize it too, and the highest concentration is in the brain where it plays an important role making other neurotransmitters, and some steroid hormones bind to their receptors.

## 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	8.0	44.41
Water	49.25	273.37

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	5.55 mL	27.75 mL	55.51 mL
5 mM	1.11 mL	5.55 mL	11.10 mL
10 mM	0.56 mL	2.78 mL	5.55 mL
50 mM	0.11 mL	0.56 mL	1.11 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. Li Q, Zhang X, Zhao Y, Gao H, Li L, Zhang Y, Yu X. Myo-inositol facilitates astaxanthin and lipid coproduction in *Haematococcus pluvialis* by regulating oxidative stress and ethylene signalling. *Bioresour Technol.* 2022 Dec;366:128222. doi: 10.1016/j.biortech.2022.128222. Epub 2022 Nov 1. PMID: 36328171.
2. Watkins OC, Cracknell-Hazra VKB, Pillai RA, Selvam P, Yong HEJ, Sharma N, Patmanathan SN, Cazenave-Gassiot A, Bendt AK, Godfrey KM, Lewis RM, Wenk MR, Chan SY. Myo-Inositol Moderates Glucose-Induced Effects on Human Placental 13C-Arachidonic Acid Metabolism. *Nutrients.* 2022 Sep 26;14(19):3988. doi: 10.3390/nu14193988. PMID: 36235641; PMCID: PMC9572372.

### In vivo study

1. Qi H, Deng F, Wang Y, Zhang H, Kanwar YS, Dai Y. Myo-Inositol Supplementation Alleviates Cisplatin-Induced Acute Kidney Injury via Inhibition of Ferroptosis. *Cells.* 2022 Dec 21;12(1):16. doi: 10.3390/cells12010016. PMID: 36611810; PMCID: PMC9818458.

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2. Ebert T, Heinz DE, Almeida-Corrêa S, Cruz R, Dethloff F, Stark T, Bajaj T, Maurel OM, Ribeiro FM, Calcagnini S, Hafner K, Gassen NC, Turck CW, Boulat B, Czisch M, Wotjak CT. Myo-Inositol Levels in the Dorsal Hippocampus Serve as Glial Prognostic Marker of Mild Cognitive Impairment in Mice. *Front Aging Neurosci.* 2021 Nov 12;13:731603. doi: 10.3389/fnagi.2021.731603. PMID: 34867270; PMCID: PMC8633395.

## 7. Bioactivity

Biological target:

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i-Inositol is a chemical compound, associated lipids are found in many foods, in particular fruit, especially cantaloupe and oranges.

### In vitro activity

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Under 200  $\mu$ M MI (myo-inositol), algal cells exhibited 62.11% and 34.67% increases in astaxanthin and lipid content, respectively, compared to the control. The carotenogenesis and lipogenesis genes were upregulated by induction of MI. Interestingly, MI addition elevated the ethylene (ETH) content and activated antioxidant enzyme-associated gene levels, which could be involved in alleviating oxidative stress. Further data showed that the ETH signal played a positive function in stimulating astaxanthin biosynthesis under MI induction.

Reference: *Bioresour Technol.* 2022 Dec;366:128222. <https://pubmed.ncbi.nlm.nih.gov/36328171/>

### In vivo activity

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In order to evaluate the role of myo-inositol in cisplatin-induced injury in vivo, daily intraperitoneal injection of myo-inositol was administered to C57BL/6J mice. Severe proximal renal tubular damage (characterized by tubular dilatation, cast formation, interstitial edema, cellular vacuolization, and focal nuclear drop out) was observed in kidneys of cisplatin-treated mice, as compared with the controls (Figure 2B,E vs. Figure 2A,D). These morphologic aberrations were mitigated with the treatment of myo-inositol (Figure 2I,L vs. Figure 2H,K). The qRT-PCR analysis indicated a marked increase in KIM-1 and NGAL mRNA levels in cisplatin-treated kidneys, which were normalized with the supplementation of myo-inositol (Figure 2O,P). Taken together, these data suggest that the myo-inositol treatment ameliorates cisplatin-induced AKI.

Reference: *Cells.* 2022 Dec 21;12(1):16. <https://pubmed.ncbi.nlm.nih.gov/36611810/>

*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.*