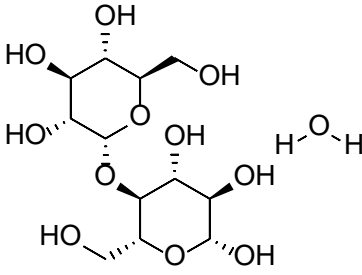


Product data sheet



MedKoo Cat#: 576846 Name: Maltose monohydrate CAS: 6363-53-7 Chemical Formula: C ₁₂ H ₂₄ O ₁₂ Exact Mass: 360.1268 Molecular Weight: 360.312	
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:

Maltose monohydrate is a biochemical sugar.

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	15.0	41.63
DMSO	15.0	41.63
PBS (pH 7.2)	10.0	27.75
Water	100.0	277.54

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.78 mL	13.88 mL	27.75 mL
5 mM	0.56 mL	2.78 mL	5.55 mL
10 mM	0.28 mL	1.39 mL	2.78 mL
50 mM	0.06 mL	0.28 mL	0.56 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

- Zhao D, Meng F, Zhou L, Lu F, Bie X, Sun J, Lu Z, Lu Y. Maltose effective improving production and regulatory biosynthesis of plantaricin EF in *Lactobacillus plantarum* 163. *Appl Microbiol Biotechnol.* 2021 Apr;105(7):2713-2723. doi: 10.1007/s00253-021-11218-w. Epub 2021 Mar 12. PMID: 33710357.
- Zhang QQ, Liu ZH, Liu LL, Hu G, Lei GL, Wang Y, Cao Y, Wu W, Zhang L, Liao QP. Prebiotic Maltose Gel Can Promote the Vaginal Microbiota From BV-Related Bacteria Dominant to *Lactobacillus* in Rhesus Macaque. *Front Microbiol.* 2020 Nov 6;11:594065. doi: 10.3389/fmicb.2020.594065. PMID: 33240248; PMCID: PMC7677408.

In vivo study

- Jiang M, Yang L, Chen ZG, Lai SS, Zheng J, Peng B. Exogenous maltose enhances Zebrafish immunity to levofloxacin-resistant *Vibrio alginolyticus*. *Microb Biotechnol.* 2020 Jul;13(4):1213-1227. doi: 10.1111/1751-7915.13582. Epub 2020 May 4. PMID: 32364684; PMCID: PMC7264874.
- Ni W, Zhang Q, Liu G, Wang F, Yuan H, Guo Y, Zhang X, Xie F, Li Q, Tai G. *Escherichia coli* maltose-binding protein activates mouse peritoneal macrophages and induces M1 polarization via TLR2/4 in vivo and in vitro. *Int Immunopharmacol.* 2014 Jul;21(1):171-80. doi: 10.1016/j.intimp.2014.04.025. Epub 2014 May 10. PMID: 24825603.

Product data sheet



7. Bioactivity

Biological target:

Maltose monohydrate is a biochemical sugar.

In vitro activity

Maltose significantly improved the biomass and plantaricin EF production, which increased by 3.35 and 3.99 times comparing to the control without maltose, respectively. The maximum production of plantaricin E and F in fed-batch fermentation were 10.55 mg/L and 22.94 mg/L, respectively. Besides, qPCR results showed that maltose remarkably improved transcription of plnA, plnB, plnD, plnE, plnF, plnG1 and plnH, and heighten transcription of lamR, lamK, hpk6 and rrp6.

Reference: Appl Microbiol Biotechnol. 2021 Apr;105(7):2713-2723. <https://pubmed.ncbi.nlm.nih.gov/33710357/>

In vivo activity

Lev-resistant (Lev-R) *V. alginolyticus* exhibits slow growth, reduced pathogenicity and greater resistance to killing by the host, *Danio rerio* (zebrafish), than Lev-sensitive (Lev-S) *V. alginolyticus*, suggesting that Lev-R *V. alginolyticus* triggers a weaker innate immune response in *D. rerio* than Lev-S *V. alginolyticus*. Maltose, a crucial metabolite, is significantly downregulated in *D. rerio* infected with Lev-R *V. alginolyticus*, and exogenous maltose enhances the immune response of *D. rerio* to Lev-R *V. alginolyticus*, leading to better clearance of the infection.

Reference: Microb Biotechnol. 2020 Jul;13(4):1213-1227. <https://pubmed.ncbi.nlm.nih.gov/32364684/>

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.