# Product data sheet

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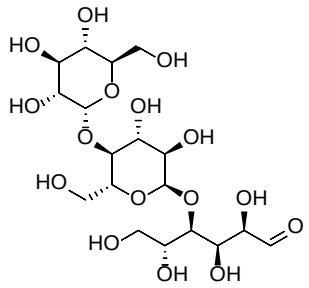
|---|---|
| MedKoo Cat#: 463041<br>Name: Maltotriose<br>CAS: 1109-28-0<br>Chemical Formula: $C_{18}H_{32}O_{16}$<br>Exact Mass: 504.169<br>Molecular Weight: 504.438 |  |
| Product supplied as: | Powder |
| Purity (by HPLC): | ≥ 98% |
| Shipping conditions | Ambient temperature |
| Storage conditions: | Powder: -20°C 3 years; 4°C 2 years. |
| | In solvent: -80°C 3 months; -20°C 2 weeks. |

**1. Product description:**
Maltotriose is a trisaccharide consisting of three glucose molecules linked with α-1,4 glycosidic bonds. It is most commonly produced by the digestive enzyme alpha-amylase on amylose in starch. It is also the shortest chain oligosaccharide that can be classified as maltodextrin.

**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 | 20.0 | 39.65 |
| DMSO | 57.5 | 113.99 |
| PBS (pH 7.2) | 3.0 | 5.95 |
| Water | 250.0 | 495.60 |

**4. Stock solution preparation table:**

| Concentration / Solvent Volume / Mass | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 1.98 mL | 9.91 mL | 19.82 mL |
| 5 mM | 0.40 mL | 1.98 mL | 3.96 mL |
| 10 mM | 0.20 mL | 0.99 mL | 1.98 mL |
| 50 mM | 0.04 mL | 0.20 mL | 0.40 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. Narumi A, Rachi R, Yamazaki H, Kawaguchi S, Kikuchi M, Konno H, Osaki T, Okamoto Y, Shen X, Kakuchi T, Kataoka H, Nomoto A, Yoshimura T, Yano S. Maltotriose-Chlorin e6 Conjugate Linked via Tetraethyleneglycol as an Advanced Photosensitizer for Photodynamic Therapy. Synthesis and Antitumor Activities against Canine and Mouse Mammary Carcinoma Cells. ACS Omega. 2021 Mar 8;6(10):7023-7033. doi: 10.1021/acsomega.0c06316. PMID: 33748616; PMCID: PMC7970547.
2. Raibaud O, Richet E. Maltotriose is the inducer of the maltose regulon of Escherichia coli. J Bacteriol. 1987 Jul;169(7):3059-61. doi: 10.1128/jb.169.7.3059-3061.1987. PMID: 3298211; PMCID: PMC212348.

In vivo study

1. Franiak-Pietryga I, Ziemba B, Sikorska H, Jander M, Kuncman W, Danilewicz M, Appelhans D, Lewkowicz P, Ostrowska K, Bryszewska M, Borowiec M. Maltotriose-modified poly(propylene imine) Glycodendrimers as a potential novel platform in the treatment of chronic lymphocytic Leukemia. A proof-of-concept pilot study in the animal model of CLL. Toxicol Appl Pharmacol. 2020 Sep 15;403:115139. doi: 10.1016/j.taap.2020.115139. Epub 2020 Jul 17. PMID: 32687837.

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**7. Bioactivity**

Biological target:

Maltotriose, the second most abundant sugar present in brewing, is an inducer of the maltose regulon of Escherichia coli.

In vitro activity

This study shows that, among all maltodextrins tested (from maltose to maltoheptaose), only maltotriose was able to induce beta-galactosidase synthesis. Likewise, in an in vitro transcription system, initiation of transcription at malPp required the presence of the MalT protein and maltotriose along with the RNA polymerase holoenzyme; neither maltose nor maltotetraose could substitute for maltotriose.

Reference: J Bacteriol. 1987 Jul;169(7):3059-61. https://pubmed.ncbi.nlm.nih.gov/3298211/

In vivo activity

This preliminary study tested the anti-tumor activity of maltotriose-modified fourth-generation poly(propylene imine) glycodendrimers (PPI-G4-M3) in vivo in the subcutaneous MEC-1 xenograft model of human chronic lymphocytic leukemia (CLL) in NOD scid gamma mice. The study showed that PPI-G4-M3 inhibited subcutaneous tumor growth more efficiently than fludarabine. The anti-tumor response was dose-dependent. Cationic PPI-G4-M3 showed the highest anti-tumor activity but also higher toxicity than the neutral dendrimers and fludarabine.

Reference: Toxicol Appl Pharmacol. 2020 Sep 15;403:115139. https://pubmed.ncbi.nlm.nih.gov/32687837/

*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.*