

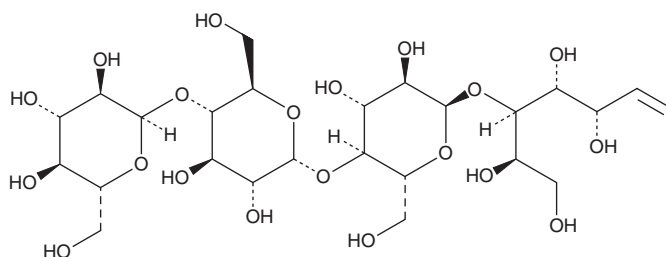
PRODUCT INFORMATION



Maltotetraose

Item No. 24975

CAS Registry No.: 34612-38-9
Formal Name: O- α -D-glucopyranosyl-(1 \rightarrow 4)-O- α -D-glucopyranosyl-(1 \rightarrow 4)-O- α -D-glucopyranosyl-(1 \rightarrow 4)-D-glucose
MF: C₂₄H₄₂O₂₁
FW: 666.6
Purity: \geq 95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: \geq 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Maltotetraose is supplied as a crystalline solid. A stock solution may be made by dissolving the maltotetraose in the solvent of choice, which should be purged with an inert gas. Maltotetraose is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of maltotetraose in these solvents is approximately 20 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of maltotetraose can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of maltotetraose in PBS (pH 7.2) is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Maltotetraose is a tetrasaccharide that is composed of glucose molecules linked by α -1,4 glycosidic bonds and has been found in *B. stearothermophilus*.¹⁻⁴ It increases the α -amylase synthesis rate in *B. stearothermophilus* 3-fold greater than sucrose or glucose (Item No. 23733) when used at a concentration of 0.1 mM.² Maltotetraose (750 μ g/ml) inhibits the growth of *E. carotovora* in a cylinder-agar plate assay but does not affect the growth of several other microorganisms.⁴ It also inhibits TNF- α -induced expression of intercellular adhesion molecule-1 (ICAM-1) in MOVAS-1 mouse smooth muscle cells (VSMCs) transfected with an ICAM-1 luciferase reporter when used at a concentration of 20 μ M.⁵

References

1. Sauer, J., Sigurskjold, B.W., Christensen, U., *et al.* Glucoamylase: structure/function relationships, and protein engineering. *Biochim. Biophys. Acta.* **1543**(2), 275-293 (2000).
2. Welker, N.E. and Campbell, L.L. Induction of α -amylase of *Bacillus stearothermophilus* by maltodextrins. *J. Bacteriol.* **86**(4), 687-691 (1963).
3. Fujita, M., Torigoe, K., Nakada, T., *et al.* Cloning and nucleotide sequence of the gene (*amyP*) for maltotetraose-forming amylase from *Pseudomonas stutzeri* MO-19. *J. Bacteriol.* **171**(3), 1333-1339 (1989).
4. Kondo, H., Honke, T., Hasegawa, R., *et al.* Isolation of maltotetraose from *Streptomyces* as an antibiotic against *Erwinia carotovora*. *J. Antibiot. (Tokyo)* **28**(2), 157-160 (1975).
5. Shin, S.Y., Jung, Y.J., Yong, Y., *et al.* Inhibition of PDGF-induced migration and TNF- α -induced ICAM-1 expression by maltotetraose from bamboo stem extract (BSE) in mouse vascular smooth muscle cells. *Mol. Nutr. Food Res.* **60**(9), 2086-2097 (2016).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 10/17/2022

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD

ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM