

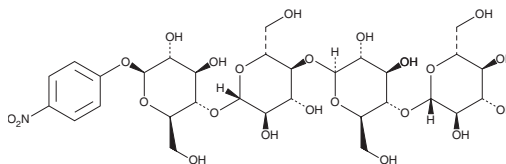
PRODUCT INFORMATION



4-Nitrophenyl β -D-Cellotetraoside

Item No. 21406

CAS Registry No.: 129411-62-7
Formal Name: 4-nitrophenyl O- β -D-glucopyranosyl-(1 \rightarrow 4)-O- β -D-glucopyranosyl-(1 \rightarrow 4)-O- β -D-glucopyranosyl-(1 \rightarrow 4)- β -D-glucopyranoside
Synonym: *p*-Nitrophenyl β -D-Cellotetraoside
MF: C₃₀H₄₅NO₂₃
FW: 787.7
Purity: \geq 99%
Supplied as: A 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

4-Nitrophenyl β -D-cellotetraoside is supplied as a solid. A stock solution may be made by dissolving the 4-nitrophenyl β -D-cellotetraoside in the solvent of choice. 4-Nitrophenyl β -D-cellotetraoside is slightly soluble in the organic solvent DMSO, which should be purged with an inert gas.

4-Nitrophenyl β -D-cellotetraoside is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

4-Nitrophenyl β -D-cellotetraoside is small molecule cellulose mimic that consists of a tetramer of D-glucose units joined by β -1-4-glycosidic bonds. An aglycosidic bond links a 4-nitrophenyl moiety to the anomeric carbon of the first glucose unit. 4-Nitrophenyl β -D-cellotetraoside is employed in cellulose degradation studies to determine the specificity of cellulases.¹⁻³ The defined, small, and soluble structure of 4-nitrophenyl β -D-cellotetraoside makes it well suited for these studies. Its fragmentation pattern after enzymatic digestion can be analyzed by TLC or by release of 4-nitrophenol which exhibits strong absorbance at 395 nm in alkaline solution.¹⁻³

References

1. Hakamada, Y., Endo, K., Takizawa, S., *et al.* Enzymatic properties, crystallization, and deduced amino acid sequence of an alkaline endoglucanase from *Bacillus circulans*. *Biochim Biophys. Acta.* **1570(3)**, 174-180 (2002).
2. Hayashi, Y., Kitayaki, M., Takezaki, K., *et al.* Transcellobiosylation reactions catalyzed by different exoglucanase components of a *Trichoderma viride* cellulase in aqueous organic solvent. *Biocatalysis and Biotransformation* **21(1)**, 25-31 (2009).
3. Zverlov, V.V., Velikodvorskaya, G.A., and Schwarz, W.H. A newly described cellulosomal cellobiohydrolase, CelO, from *Clostridium thermocellum*: Investigation of the exo-mode of hydrolysis, and binding capacity to crystalline cellulose. *Microbiology* **148(Pt. 1)**, 247-255 (2002).

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.

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