

PRODUCT INFORMATION



Penta-N-acetylchitopentaose

Item No. 16101

CAS Registry No.: 36467-68-2

Formal Name: O-2-(acetylamino)-2-deoxy-β-D-glucopyranosyl-(1→4)-O-2-(acetylamino)-2-deoxy-β-D-glucopyranosyl-(1→4)-O-2-(acetylamino)-2-deoxy-β-D-glucopyranosyl-(1→4)-O-2-(acetylamino)-2-deoxy-β-D-glucopyranosyl-(1→4)-2-(acetylamino)-2-deoxy-D-glucose

Synonyms: Chitinpentaose, N,N',N'',N''',N''''-Pentaacetylchitopentaose

MF: C₄₀H₆₇N₅O₂₆

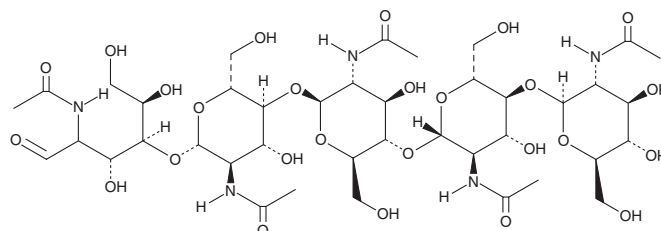
FW: 1,034.0

Purity: ≥95%

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥4 years



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

Laboratory Procedures

Penta-N-acetylchitopentaose is supplied as a crystalline solid. Aqueous solutions of penta-N-acetylchitopentaose can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of penta-N-acetylchitopentaose in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Root nodules, like those induced on the roots of leguminous plants by *Rhizobium* bacteria, are important sites for the conversion of atmospheric nitrogen into ammonia. The initiation and development of these growths are driven by a variety of nodulation (Nod) proteins produced by the infecting bacteria. Penta-N-acetylchitopentaose is a pentameric chito-oligosaccharide involved in nodulation. It can be produced by NodC, a chito-oligosaccharide synthase, and serve as a substrate for NodL, an O-acetyltransferase.¹⁻³ This bacterial product binds plant root lectins, and this interaction may be important in the promotion of cell division in the root cortex.^{4,5} Penta-N-acetylchitopentaose, as well as chitin and chitosan, inhibits nitric oxide production in LPS-activated RAW 264.7 macrophages.⁶

References

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2. Huang, G.L., Zhang, D.W., Zhao, H.J., *et al.* *Bioorg. Med. Chem. Lett.* **16**(7), 2042-2043 (2006).
3. Bloemberg, G.V., Thomas-Oates, J.E., Lugtenberg, B.J., *et al.* *Mol. Microbiol.* **11**(4), 793-804 (1994).
4. Anantharam, V., Patanjali, S.R., Swamy, M.J., *et al.* *J. Biol. Chem.* **261**(3), 14621-14627 (1986).
5. Díaz, C.L., Spaik, H.P., and Kijne, J.W. *Mol. Plant Microbe Interact.* **13**(3), 268-276 (2000).
6. Hwang, S.M., Chen, C.Y., Chen, S.S., *et al.* *Biochem. Biophys. Res. Commun.* **271**(1), 229-233 (2000).

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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