



# SZABO SCANDIC

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## Produktinformation



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# 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

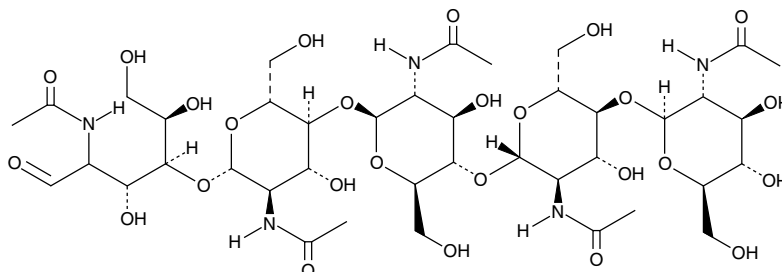
**MF:** C<sub>40</sub>H<sub>67</sub>N<sub>5</sub>O<sub>26</sub>

**FW:** 1,034.0

**Purity:** ≥95%

**Stability:** ≥2 years at -20°C

**Supplied as:** A crystalline solid



### Laboratory Procedures

For long term storage, we suggest that penta-N-acetylchitopentaose be stored as supplied at -20°C. It should be stable for at least two years.

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.

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.<sup>1-3</sup> This bacterial product binds plant root lectins, and this interaction may be important in the promotion of cell division in the root cortex.<sup>4-5</sup> Penta-N-acetylchitopentaose, as well as chitin and chitosan, inhibits nitric oxide production in LPS-activated RAW 264.7 macrophages.<sup>6</sup>

### References

1. Kamst, E., van der Drift, K.M., Thomas-Oates, J.E., *et al. J. Bacteriol.* **177**(21), 6282-6285 (1995).
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. Dkz, C.L., Spaink, 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).

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For a list of related products please visit: [www.caymanchem.com/catalog/16101](http://www.caymanchem.com/catalog/16101)

**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

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