

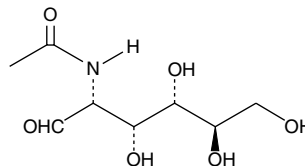
Product Information



N-acetyl-D-Glucosamine

Item No. 13136

CAS Registry No.: 7512-17-6
Formal Name: 2-(acetylamino)-2-deoxy-D-glucose
Synonyms: GlcNAc, Marine Sweet, NAG, NSC 524344
MF: C₈H₁₅NO₆
FW: 221.2
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid



Laboratory Procedures

For long term storage, we suggest that N-acetyl-D-glucosamine (GlcNAc) be stored as supplied at -20°C. It should be stable for at least two years.

GlcNAc is supplied as a crystalline solid. A stock solution may be made by dissolving the GlcNAc in an organic solvent purged with an inert gas. GlcNAc is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of GlcNAc in these solvents is approximately 10 and 0.25 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 GlcNAc can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of GlcNAc in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

GlcNAc is a monosaccharide derivative of glucose. It is released by the action of *O*-GlcNAcase, in mammalian systems from proteins that have been post-translationally modified with *O*-GlcNAc. Levels of *O*-GlcNAcylation proteins from Alzheimer's disease brain extracts are decreased as compared to that in controls, suggesting that release of GlcNAc may contribute to pathogenesis.¹ In *E. coli*, GlcNAc induces the expression of multidrug exporter genes, indicating that this sugar can alter gene expression.¹ GlcNAc is also the monomeric unit of chitin, which is found in fungi and many invertebrates, including crustaceans, insects, and nematodes. For this reason, chemicals that inhibit the incorporation of GlcNAc into chitin are cytotoxic to these organisms.

Reference

1. Liu, F., Iqbal, K., Grundke-Iqbal, I., *et al.* O-GlcNAc Acylation regulates phosphorylation of tau: A mechanism involved in Alzheimer's disease. *Proc. Natl. Acad. Sci. USA* **101**(29), 10804-10809 (2004).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/13136

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

SAFETY DATA

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Said refund or replacement is conditioned on Buyer giving written notice to Cayman within thirty (30) days after arrival of the material at its destination. Failure of Buyer to give said notice within thirty (30) days shall constitute a waiver by Buyer of all claims hereunder with respect to said material.

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