

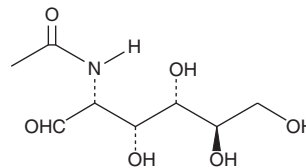
PRODUCT INFORMATION



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%
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

N-acetyl-D-Glucosamine is supplied as a crystalline solid. A stock solution may be made by dissolving the N-acetyl-D-glucosamine in the solvent of choice, which should be purged with an inert gas. N-acetyl-D-Glucosamine is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of N-acetyl-D-glucosamine in these solvents is approximately 10 and 0.25 mg/ml, respectively.

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 N-acetyl-D-glucosamine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of N-acetyl-D-glucosamine in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

N-acetyl-D-Glucosamine (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-GlcNAcylation regulates phosphorylation of tau: A mechanism involved in Alzheimer's disease. *Proc. Natl. Acad. Sci. USA* **101**(29), 10804-10809 (2004).

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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