Product Information

N-acetyl-D-Mannosamine
Catalog No. 10011060

CAS Registry No.: 7772-94-3
Formal Name: 2-(acetylamino)-2-deoxy-β-D-mannopyranose
Synonym: ManNAc
MF: C8H15NO6
FW: 221.2
Purity: ≥95%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid

Laboratory Procedures

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

ManNAc is supplied as a crystalline solid. A stock solution may be made by dissolving the ManNAc in an organic solvent purged with an inert gas. ManNAc is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of ManNAc in these solvents is approximately 0.2, 5, and 2 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 ManNAc can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of ManNAc in PBS, pH 7.2, is approximately 5 mg/mL. We do not recommend storing the aqueous solution for more than one day.

Sialic acids, commonly present as terminal carbohydrates on glycoconjugates, are essential for a variety of cellular functions including cell adhesion and signal recognition as well as the formation and progression of tumors. Disruption of sialic acid biosynthesis can result in severe glomerular proteinuria or neuromuscular disorders such as hereditary inclusion body myopathy (HIBM). ManNAc is the precursor of all physiological sialic acids. Intraperitoneal injection of ManNAc twice daily at 1,000 mg/kg in C57BL/6 mice for 13 days leads to increased sialylation in kidney, liver, blood cells, brain, spinal cord, muscle, heart, lung, and spleen. ManNAc reverses hyposialylation and improves glomerular integrity in GneM712T/M712T mice whose key enzyme for sialic acid production has been deleted and may prove therapeutic in the treatment of HIBM.

References

WARNING: This product is for laboratory research only; not for administration to humans. Not for human or veterinary diagnostic or therapeutic use.

MATERIAL SAFETY DATA
This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user should review the complete Material Safety Data Sheet, which has been sent under separate cover to the MSDS supervisor at your institution.

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