

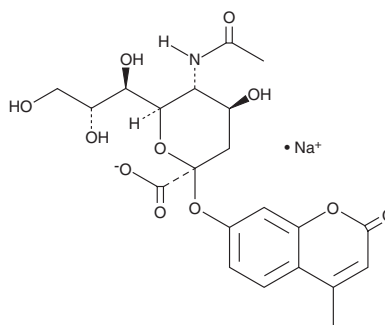
PRODUCT INFORMATION



4-Methylumbelliferyl-N-acetyl- α -D-Neuraminic Acid (sodium salt)

Item No. 16620

CAS Registry No.: 76204-02-9
Formal Name: 4-methyl-2-oxo-2H-1-benzopyran-7-yl
5-(acetylamino)-3,5-dideoxy- α -neuraminic acid,
monosodium salt
Synonyms: 4-MUNANA, Neu5Ac- α -4MU, Sodium
2-(4-methylumbelliferyl)-N-acetylneuraminic acid
MF: C₂₁H₂₄NO₁₁ • Na
FW: 489.4
Purity: \geq 98%
UV/Vis.: λ_{max} : 317 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: \geq 4 years



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

Laboratory Procedures

4-Methylumbelliferyl-N-acetyl- α -D-neuraminic acid (4-MUNANA) (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the 4-MUNANA (sodium salt) in the solvent of choice. 4-MUNANA (sodium salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of 4-MUNANA (sodium salt) in these solvents is approximately 0.25, 20, and 15 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 4-MUNANA (sodium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 4-MUNANA (sodium salt) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

4-Methylumbelliferyl-N-acetyl- α -D-neuraminic acid is a fluorogenic substrate of neuraminidases.¹ 4-Methylumbelliferyl-N-acetyl- α -D-neuraminic acid is cleaved by neuraminidases to release the fluorescence moiety 4-methylumbelliferyl (4-MU). 4-MU fluorescence is pH-dependent with excitation maxima of 320 and 360 nm at low (1.97-6.72) and high (7.12-10.3) pH, respectively, and an emission maximum ranging from 445 to 455 nm, increasing as pH decreases. 4-Methylumbelliferyl-N-acetyl- α -D-neuraminic acid has been used to quantify neuraminidase activity in mammalian cells and clinical isolates of influenza virus.²⁻⁴

References

1. Monti, E., Preti, A., Nesti, C., et al. *Glycobiology* **9**(12), 1313-1321 (1999).
2. Stamatou, N.M., Liang, F., Nan, X., et al. *FEBS J.* **272**(10), 2545-2556 (2005).
3. Cross, A.S., Hyun, S.W., Miranda-Ribera, A., et al. *J. Biol. Chem.* **287**(19), 15966-15980 (2012).
4. Wetherall, N.T., Trivedi, T., Zeller, J., et al. *J. Clin. Microbiol.* **41**(2), 742-750 (2003).

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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