

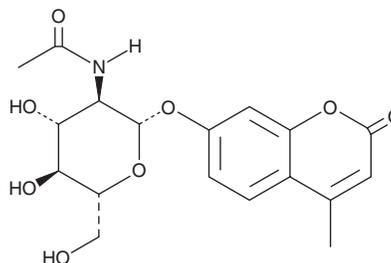
PRODUCT INFORMATION



4-Methylumbelliferyl-2-acetamido-2-deoxy-β-D-Glucopyranoside

Item No. 26953

CAS Registry No.: 37067-30-4
Formal Name: 7-[[2-(acetylamino)-2-deoxy-β-D-glucopyranosyl]oxy]-4-methyl-2H-1-benzopyran-2-one
Synonyms: 4-Methylumbelliferyl-N-acetyl-β-Glucosaminide, 4-MU-2-acetamido-2-deoxy-β-D-Glucopyranoside
MF: C₁₈H₂₁NO₈
FW: 379.4
Purity: ≥98%
Ex./Em. Max: 320 and 360 nm at low and high pH, respectively/
455 and 445 nm at low and high pH, respectively
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

4-Methylumbelliferyl-2-acetamido-2-deoxy-β-D-glucopyranoside is supplied as a crystalline solid. A stock solution may be made by dissolving the 4-methylumbelliferyl-2-acetamido-2-deoxy-β-D-glucopyranoside in the solvent of choice, which should be purged with an inert gas. 4-Methylumbelliferyl-2-acetamido-2-deoxy-β-D-glucopyranoside is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 4-methylumbelliferyl-2-acetamido-2-deoxy-β-D-glucopyranoside in these solvents is approximately 30 and 5 mg/ml, respectively.

Description

4-Methylumbelliferyl-2-acetamido-2-deoxy-β-D-glucopyranoside is a fluorogenic substrate for β-hexosaminidases.^{1,2} Upon enzymatic cleavage by β-hexosaminidases, 4-methylumbelliferone (4-MU) is released and its fluorescence can be used to quantify β-hexosaminidase activity. 4-MU fluorescence is pH-dependent with excitation maxima of 320 and 360 nm at low (1.97-6.72) and high pH (7.12-10.3), respectively, and an emission maximum ranging from 445 to 455 nm, increasing as pH decreases.³ 4-Methylumbelliferyl-2-acetamido-2-deoxy-β-D-glucopyranoside has been used to quantify β-hexosaminidase activity in serum or leukocytes from patients with G_{M2} gangliosidosis such as Tay-Sachs disease, which is characterized by defects in the α subunit of β-hexosaminidase.^{2,4}

References

1. Leaback, D.H. and Walker, P.G. Studies on glucosaminidase. 4. The fluorimetric assay of N-acetyl-β-glucosaminidase. *Biochem J.* **78(1)**, 151-156 (1961).
2. Wendeler, M. and Sandhoff, K. Hexosaminidase assays. *Glycoconj. J.* **26(8)**, 945-952 (2009).
3. Zhi, H., Wang, J., Wang, S., *et al.* Fluorescent properties of hymecromone and fluorimetric analysis of hymecromone in compound dantong capsule. *J. Spectrosc.* **147128** (2013).
4. Baek, R.C., Martin, D.R., Cox, N.R., *et al.* Comparative analysis of brain lipids in mice, cats, and humans with Sandhoff disease. *Lipids* **44(3)**, 197-205 (2009).

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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