

PRODUCT INFORMATION



4-Methylumbelliferyl-β-D-Glucuronide (hydrate)

Item No. 17203

Formal Name: 4-methyl-2-oxo-2H-1-benzopyran-7-yl-β-D-glucopyranosiduronic acid, dihydrate

Synonyms: 4-Methylumbelliferyl-β-D-Glucopyranosiduronic Acid, MUG

MF: C₁₆H₁₆O₉ • 2H₂O

FW: 388.3

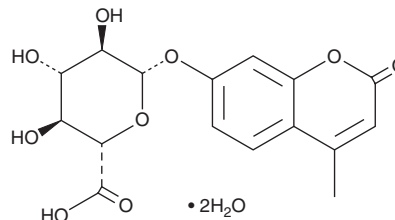
Purity: ≥95%

UV/Vis.: λ_{max}: 319 nm

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-β-D-glucuronide (hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the 4-methylumbelliferyl-β-D-glucuronide (hydrate) in the solvent of choice. 4-Methylumbelliferyl-β-D-glucuronide (hydrate) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of 4-methylumbelliferyl-β-D-glucuronide (hydrate) in these solvents is approximately 2, 5, and 20 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 4-methylumbelliferyl-β-D-glucuronide (hydrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 4-methylumbelliferyl-β-D-glucuronide (hydrate) in PBS, pH 7.2, is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

4-Methylumbelliferyl-β-D-glucuronide is a fluorogenic substrate of β-glucuronidase.¹ 4-Methylumbelliferyl-β-D-glucuronide is cleaved by β-glucuronidase to release the fluorescent 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-β-D-glucuronide has been used in the β-glucuronidase reporter system, also known as the GUS reporter system, for fluorescent detection of β-glucuronidase gene expression in *E. coli* and transformed plants.^{1,2}

References

1. Jefferson, R.A., Kavanagh, T.A., and Bevan, M.W. GUS fusions: β-glucuronidase as a sensitive and versatile gene fusion marker in higher plants. *EMBO J.* **6**(13), 3901-3907 (1987).
2. Moberg, L.J. Fluorogenic assay for rapid detection of *Escherichia coli* in food. *Appl. Environ. Microbiol.* **50**(6), 1383-1387 (1985).

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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