

PRODUCT INFORMATION

4-Methylumbelliferyl- α -L-Iduronide 2-sulfate (sodium salt)

Item No. 9001600

Formal Name: (2R,3S,4S,5R,6S)-3,4-dihydroxy-6-((4-methyl-2-oxo-2H-chromen-7-yl)oxy)-5-(sulfonatooxy)tetrahydro-2H-pyran-2-carboxylate, disodium salt

Synonyms: 4-Methylumbelliferyl- α -L-Idopyranosiduronic Acid 2-sulfate, 4-MU- α -IdoA 2-sulfate, MU- α -IdoA 2-sulfate

MF: $C_{16}H_{14}O_{12}S \cdot 2Na$

FW: 476.3

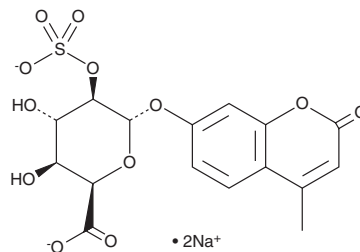
Purity: $\geq 98\%$ (mixture of isomers)

UV/Vis.: λ_{max} : 319 nm

Supplied as: A crystalline solid

Storage: $-20^{\circ}C$

Stability: ≥ 2 years



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

Laboratory Procedures

4-Methylumbelliferyl- α -L-iduronide 2-sulfate (4-MU- α -IdoA 2-sulfate) is supplied as a crystalline solid. A stock solution may be made by dissolving the 4-MU- α -IdoA 2-sulfate in the solvent of choice. 4-MU- α -IdoA 2-sulfate is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of 4-MU- α -IdoA 2-sulfate in these solvents is approximately 30 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-MU- α -IdoA 2-sulfate can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 4-MU- α -IdoA 2-sulfate 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-MU- α -IdoA 2-sulfate is a fluorogenic substrate of α -L-iduronidase that has been used in an assay to detect Hurler syndrome.¹ It is also used as a substrate for iduronate-2-sulfatase in tests for Hunter disease.^{2,3} For these latter tests, the initial enzymatic product, 4-MU- α -IdoA (Item No. 19543) can be measured by mass spectrometry, or it can be hydrolyzed with α -L-iduronidase to liberate the fluorophore 4-MU, which has an emission maximum at 445-454 nm. The excitation maximum for 4-MU is pH-dependent: 330, 370, and 385 nm at pH 4.6, 7.4, and 10.4, respectively.⁴

References

1. Matalon, R. and Dorfman, A. *Biochem. Biophys. Res. Commun.* **47**(4), 959-964 (1972).
2. Lee, K., Jun, S.-H., Song, S.H., et al. *Clin. Biochem.* **48**(18), 1350-1353 (2015).
3. Voznyi, Y. V., Keulemans, J.L., and Van Diggelen, O.P. *J. Inher. Metab. Dis.* **24**(6), 675-680 (2001).
4. Zhi, H., Wang, J., Wang, S., et al. *J. Spectrosc.* **2013**, 1-9 (2014).

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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