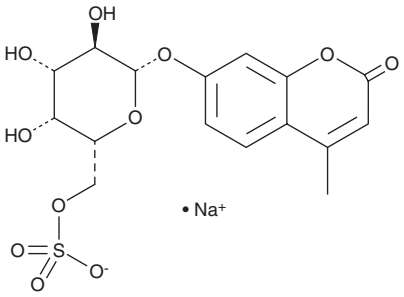
PRODUCT INFORMATION

4-Methylumbelliferyl β-D-Galactopyranoside-6-sulfate (sodium salt)

Item No. 20907

CAS Registry No.:	206443-06-3
Formal Name:	4-methyl-7-[(6-O-sulfo-β-D-galactopyranosyl)oxy]-2H-1-benzopyran-2-one, monosodium salt
Synonyms:	**4**-MU-Gal-6S, 4-MU β-D-galactopyranoside-6-sulfate, 4-Methylumbelliferyl Gal-6S
MF:	$C_{16}H_{17}O_{11}S \bullet Na$
FW:	440.4
Purity:	≥98%
UV/Vis.:	λ_{max}: 318 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-galactopyranoside-6-sulfate (4-MU-Gal-6S) (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the 4-MU-Gal-6S (sodium salt) in the solvent of choice, which should be purged with an inert gas. 4-MU-Gal-6S (sodium salt) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 4-MU-Gal-6S (sodium salt) 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-Gal-6S (sodium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 4-MU-Gal-6S (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-MU-Gal-6S (sodium salt) is a fluorogenic substrate used to quantify *N*-acetylgalactosamine-6-sulphatase (GALNS) activity.[1] 4-MU-Gal-6S is cleaved by GALNS to release the fluorescent moiety 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.[2] It has been used to detect Morquio disease type A, a lysosomal storage disorder in which GALNS is deficient.[1] 4-MU-Gal-6S can be used to assess GALNS activity in a very small blood volume to determine the extent of deficiency.[3]

References

1. Van Diggelen, O.P., Zhao, H., Kleijer, W.J., *et al.* A fluorimetric enzyme assay for the diagnosis of Morquio disease type A (MPS IV A). *Clin. Chim. Acta* **187(2)**, 131-139 (1990).
2. Zhi, H., Wang, J., Wang, S., *et al.* Fluorescent properties of hymecromone and fluorimetric analysis of hymecromone in compound dantong capsule. *J. Spectrosc.* **2013(147128)**, 1-9 (2014).
3. Cozma, C., Eichler, S., Wittmann, G., *et al.* Diagnosis of Morquio syndrome in dried blood spots based on a new MRM-MS assay. *PLoS One* **10(7)**, (2015).

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