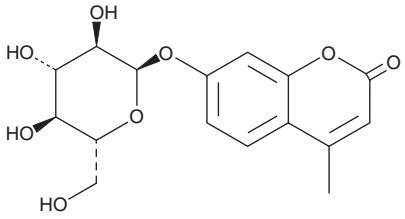
PRODUCT INFORMATION

4-Methylumbelliferyl-α-D-Glucopyranoside

Item No. 26810

CAS Registry No.:	17833-43-1
Formal Name:	7-(α-D-glucopyranosyloxy)-4-methyl-2H-1-benzopyran-2-one
Synonyms:	4-Methylumbelliferyl-α-D-Glucose, 4-Methylumbelliferyl-α-D-Glucoside, 4-MU-α-D-Glucopyranoside
MF:	$C_{16}H_{18}O_8$
FW:	338.3
Purity:	≥95%
UV/Vis.:	λ_{max}: 217, 318 nm
Ex. Max.:	320 and 360 nm at low (1.97-6.72) and high (7.12-10.3) pH, respectively
Em. Max.:	445 to 455 nM, increasing as pH decreases
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-α-D-glucopyranoside is supplied as a crystalline solid. A stock solution may be made by dissolving the 4-methylumbelliferyl-α-D-glucopyranoside in the solvent of choice, which should be purged with an inert gas. 4-Methylumbelliferyl-α-D-glucopyranoside is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 4-methylumbelliferyl-α-D-glucopyranoside in these solvents is approximately 50 and 5 mg/ml, respectively.

Description

4-Methylumbelliferyl-α-D-glucopyranoside is a fluorogenic substrate for α-glucosidase.[1,2] 4-Methylumbelliferyl-α-D-glucopyranoside is cleaved by α-glucosidase 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 pH (7.12-10.3), respectively, and an emission maximum ranging from 445 to 455 nm, increasing as pH decreases.[3] 4-Methylumbelliferyl-α-D-glucopyranoside has been used to quantify α-glucosidase activity in infant blood spot samples as a biomarker of Fabry and Pompe diseases, lysosomal storage disorders characterized by a deficiency in the enzyme.[1,2]

References

1. Olivova, P., van der Veen, K., Cullen, E., *et al.* Effect of sample collection on alpha-galactosidase A enzyme activity measurements in dried blood spots on filter paper. *Clin. Chim. Acta.* **403(1-2)**, 159-162 (2009).
2. Wens, S.C., Kroos, M.A., de Vries, J.M., *et al.* Remarkably low fibroblast acid α-glucosidase activity in three adults with Pompe disease. *Mol. Genet. Metab.* **107(3)**, 485-489 (2012).
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).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM