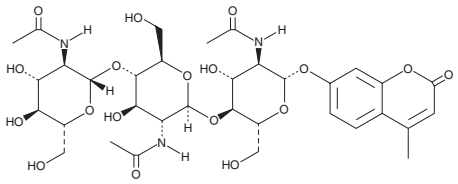
PRODUCT INFORMATION

4-Methylumbelliferyl-β-D-N,N',N''-Triacetylchitotrioside

Item No. 19715

CAS Registry No.: 53643-13-3
Formal Name: 7-[[O-2-(acetylamino)-2-deoxy-β-D-glucopyranosyl-(1→4)-O-2-(acetylamino)-2-deoxy-β-D-glucopyranosyl-(1→4)-2-(acetylamino)-2-deoxy-β-D-glucopyranosyl]oxy]-4-methyl-2H-1-benzopyran-2-one
Synonym: MUF-triNAG
MF: $C_{34}H_{47}N_3O_{18}$
FW: 785.8
Purity: ≥98%
UV/Vis.: λ_{max}: 317 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-N,N',N''-triacetylchitotrioside (MUF-triNAG) is supplied as a crystalline solid. A stock solution may be made by dissolving the MUF-triNAG in the solvent of choice, which should be purged with an inert gas. MUF-triNAG is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of MUF-triNAG in these solvents is approximately 10 and 5 mg/ml, respectively.

Description

MUF-triNAG is a fluorogenic substrate for chitinases and chitotriosidases.[1-3] MUF-triNAG is cleaved by chitinases and chitotriosidases 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.[1] It has been used to screen plasma samples for reduced chitotriosidase activity that may be indicative of lysosomal storage disorders.[1]

References

1. Elmonem, M.A., Ramadan, D.I., Issac, M.S., *et al.* Blood spot versus plasma chitotriosidase: A systematic clinical comparison. *Clin. Biochem.* **47(1-2)**, 38-43 (2014).
2. Howard, M.B., Ekborg, N.A., Taylor, L.E., *et al.* Genomic analysis and initial characterization of the chitinolytic system of *Microbulbifer degradans* strain 2-40. *J. Bacteriol.* **185(11)**, 3352-3360 (2003).
3. Mukamolova, G.V., Murzin, A.G., Salina, E.G., *et al.* Muralytic activity of *Micrococcus luteus* Rpf and its relationship to physiological activity in promoting bacterial growth and resuscitation. *Mol. Microbiol.* **59(1)**, 84-98 (2006).
4. 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).

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