

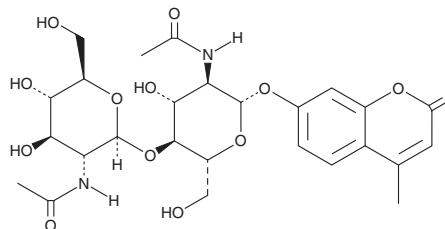
# PRODUCT INFORMATION



## 4-Methylumbelliferyl $\beta$ -D-N,N'-diacetylchitobioside

Item No. 27730

**CAS Registry No.:** 53643-12-2  
**Formal Name:** 7-[[2-(acetylamino)-4-O-[2-(acetylamino)-2-deoxy- $\beta$ -D-glucopyranosyl]-2-deoxy- $\beta$ -D-glucopyranosyl]oxy]-4-methyl-2H-1-benzopyran-2-one  
**Synonyms:** 4-Methylumbelliferyl N,N'-diacetyl- $\beta$ -chitobioside, 4-MU-(GlcNAc)<sub>2</sub>  
**MF:** C<sub>26</sub>H<sub>34</sub>N<sub>2</sub>O<sub>13</sub>  
**FW:** 582.6  
**Purity:**  $\geq$ 98%  
**UV/Vis.:**  $\lambda_{\text{max}}$ : 317 nm  
**Ex./Em. Max:** 320 and 360 at low (1.97-6.72) and high pH (7.12-10.3), respectively/445-455 nm, increasing as pH decreases  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:**  $\geq$ 4 years



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

### Laboratory Procedures

4-Methylumbelliferyl  $\beta$ -D-N,N'-diacetylchitobioside (4-MU-(GlcNAc)<sub>2</sub>) is supplied as a solid. A stock solution may be made by dissolving the 4-MU-(GlcNAc)<sub>2</sub> in the solvent of choice, which should be purged with an inert gas. 4-MU-(GlcNAc)<sub>2</sub> is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 4-MU-(GlcNAc)<sub>2</sub> in these solvents is approximately 10 mg/ml.

### Description

4-MU-(GlcNAc)<sub>2</sub> is a fluorogenic substrate for chitinases and chitobiosidases.<sup>1,2</sup> 4-MU-(GlcNAc)<sub>2</sub> is cleaved by chitinases and chitobiosidases 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 pH (7.12-10.3), respectively, and an emission maximum ranging from 445 to 455 nm, increasing as pH decreases.

### References

1. Sandalli, C., Kacagan, M., Canakci, S., *et al.* Cloning, expression, purification and characterisation of a thermostable chitinase from *Bacillus licheniformis* A1. *Ann. Microbiol.* **58(2)**, 245-251 (2008).
2. Tronsmo, A. and Harman, G.E. Detection and quantification of *N*-acetyl- $\beta$ -D-glucosaminidase, chitobiosidase, and endochitinase in solutions and on gels. *Anal. Biochem.* **208(1)**, 74-79 (1993).

#### 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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