

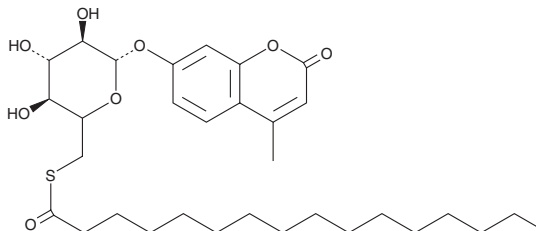
# PRODUCT INFORMATION



## 4-Methylumbelliferyl 6-thio-Palmitate-β-D-Glucopyranoside

Item No. 19524

**CAS Registry No.:** 229644-17-1  
**Formal Name:** 4-methyl-7-[[[6-S-(1-oxohexadecyl)-6-thio-β-D-glucopyranosyl]oxy]-2H-1-benzopyran-2-one  
**Synonym:** Mu-6S-Palm-β-Glc  
**MF:** C<sub>32</sub>H<sub>48</sub>O<sub>8</sub>S  
**FW:** 592.8  
**Purity:** ≥95%  
**UV/Vis.:** λ<sub>max</sub>: 216, 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 6-thio-palmitate-β-D-glucopyranoside is supplied as a crystalline solid. A stock solution may be made by dissolving the 4-methylumbelliferyl 6-thio-palmitate-β-D-glucopyranoside in the solvent of choice. 4-Methylumbelliferyl 6-thio-palmitate-β-D-glucopyranoside is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of 4-methylumbelliferyl 6-thio-palmitate-β-D-glucopyranoside in these solvents is approximately 30 mg/ml.

4-Methylumbelliferyl 6-thio-palmitate-β-D-glucopyranoside is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

### Description

4-Methylumbelliferyl 6-thio-palmitate-β-D-glucopyranoside is a fluorogenic substrate of palmitoyl-protein thioesterase (PPT, also known as CLN1), a lysosomal hydrolase that removes long-chain fatty acyl groups from modified cysteine residues in proteins. 4-Methylumbelliferyl 6-thio-palmitate-β-D-glucopyranoside is cleaved by PPT/CLN1 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.<sup>1</sup> This substrate is used in assays that measure PPT activity, which is commonly deficient in the neurodegenerative disorder known as infantile neuronal ceroid lipofuscinosis.<sup>2,3</sup>

### References

1. Zhi, H., Wang, J., Wang, S., *et al.* Fluorescent properties of hymecromone and fluorimetric analysis of hymecromone in compound dantong capsule. *J. Spectrosc.* **2013**, 1-9 (2014).
2. Das, A.K., Lu, J.-Y., and Hofmann, S.L. Biochemical analysis of mutations in palmitoyl-protein thioesterase causing infantile and late-onset forms of neuronal ceroid lipofuscinosis. *Hum. Mol. Genet.* **10(13)**, 1431-1439 (2001).
3. Vozni, Y.V., Keulemans, J.L.M., Mancini, G.M.S., *et al.* A new simple enzyme assay for pre- and postnatal diagnosis of infantile neuronal ceroid lipofuscinosis (INCL) and its variants. *J. Med. Genet.* **36(6)**, 471-474 (1999).

#### 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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