**PRODUCT INFORMATION**

**4-Methylumbelliferyl Palmitate**

*Item No. 16089*

- **CAS Registry No.:** 17695-48-6
- **Formal Name:** hexadecanoic acid, 4-methyl-2-oxo-2H-1-benzopyran-7-yl ester
- **Synonyms:** 4-MUP, 4-MU Palmitate, Palmitoyl 4-Methylumbelliferone
- **MF:** C_{26}H_{38}O_{4}
- **FW:** 414.6
- **Purity:** ≥98%
- **UV/Vis.:** \( \lambda_{\text{max}} \): 274, 310 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.*

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### Laboratory Procedures

4-Methylumbelliferyl palmitate (4-MUP) is supplied as a crystalline solid. A stock solution may be made by dissolving the 4-MUP in the solvent of choice, which should be purged with an inert gas. 4-MUP is soluble in organic solvents such as chloroform, DMSO, and dimethyl formamide. The solubility of 4-MUP in these solvents is approximately 20, 0.1, and 10 mg/ml, respectively.

### Description

Cholesterol ester storage disease and Wolman disease are recessive autosomal disorders caused by a deficiency in lysosomal acid lipase (LAL), also known as cholesteryl ester hydrolase.\(^1,2\) 4-MUP is a fluorogenic substrate for lysosomal acid lipase (LAL).\(^3\) 4-MUP is cleaved by LAL 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.\(^4\) 4-MUP may also be cleaved by other acid lipases.\(^5,6\) Recent advances allow the assessment of LAL activity in very small blood volumes using 4-MUP.\(^1,2\)

### References