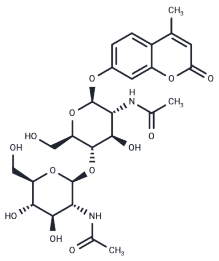
Data Sheet (Cat.No.T37567)

TargetMol

MUF-diNAG

Chemical Properties



CAS No. : 53643-12-2

Formula: C26H34N2O13

Molecular Weight: 582.55

Storage: Store at low temperature
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	MUF-diNAG (4-μU-(GlcNAc)2) is a fluorogenic substrate specifically designed for chitinases and chitobiosidases, which enzymatically cleave the molecule to release the fluorescent moiety 4-μU, MUF-diNAG exhibit pH-dependent excitation maxima at 320 and 360 nm and an emission maximum between 445 and 455 nm, thereby enabling sensitive and quantitative analysis of chitinolytic enzyme activity in biochemical and microbiological assays.
Targets(IC50)	Others
In vitro	MUF-diNAG functions as a fluorogenic substrate for chitinases, including human Chitotriosidase (CHIT1). The enzyme recognizes the N,N'-diacetylchitobiose moiety and cleaves the β-glycosidic bond between the sugar chain and the 4-MU group. While the intact substrate is non-fluorescent, hydrolysis releases free 4-Methylumbelliferone, which emits blue fluorescence at 450 nm when excited at 360 nm [2].
In vivo	In models of Gaucher disease, the hydrolysis of MUF-diNAG in plasma serves as a biochemical marker for the total burden of lipid-laden macrophages. Furthermore, CHIT1 is secreted by activated macrophages during immune responses; thus, the substrate is employed to assess the severity of inflammation in conditions such as sarcoidosis, malaria, and fungal infections [1][2].

Solubility Information

Solubility	DMF: 10 mg/mL (17.17 mM),Sonication is recommended. DMSO: 10 mg/mL (17.17 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.7166 mL	8.583 mL	17.1659 mL
5 mM	0.3433 mL	1.7166 mL	3.4332 mL
10 mM	0.1717 mL	0.8583 mL	1.7166 mL
50 mM	0.0343 mL	0.1717 mL	0.3433 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Hollak C E, van Weely S, Van Oers M H, et al. Marked elevation of plasma chitotriosidase activity. A novel hallmark of Gaucher disease[J]. The Journal of clinical investigation, 1994, 93(3): 1288-1292.

Renkema G H, et al. Purification and Characterization of Human Chitotriosidase, a Novel Member of the Chitinase Family of Proteins ()[J]. Journal of Biological Chemistry, 1995, 270(5): 2198-2202.