4-Methylumbelliferyl-β-D-glucuronide hydrate

Cat. No.: HY-D0935A

CAS No.: 881005-91-0

Molecular Formula: $C_{16}H_{18}O_{10}$

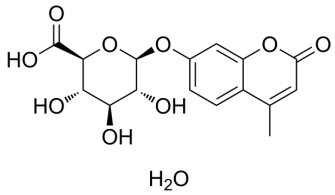
Molecular Weight: 370.31

Target: Fluorescent Dye

Pathway: Others

Storage: 4°C, protect from light

* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 150 mg/mL (405.07 mM; Need ultrasonic)

H_2O : 5.2 mg/mL (14.04 mM; Need ultrasonic and warming)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.7004 mL	13.5022 mL	27.0044 mL
5 mM	0.5401 mL	2.7004 mL	5.4009 mL
10 mM	0.2700 mL	1.3502 mL	2.7004 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 2 mg/mL (5.40 mM); Clear solution; Need ultrasonic and warming and heat to 60°C

BIOLOGICAL ACTIVITY

Description

4-Methylumbelliferyl-β-D-glucuronide hydrate is a fluorogenic substrat (λ_{ex}=362 nm, λ_{em}=445 nm). 4-Methylumbelliferyl-β-D-glucuronide hydrate has potential applications in detecting the activity of β-glucuronidase and the number of Escherichia coli[1][2][3].

In Vitro

4-Methylumbelliferyl-β-D-glucuronide hydrate (156 μM-5 mM; 30 min) releases 4-methylumbelliferone at 37℃ for enzymatic reactions[2].

4-Methylumbelliferyl-β-D-glucuronide hydrate (50 μg/mL; 24 h) is used to detect the number of Escherichia coli in TSA medium[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Kinase Assay [1]	GLUase activity of E. coli cells is measured. Three millilitres of 4-Methylumbelliferyl-β-D-glucuronide hydrate (MUGlu) solution (55 mg of hydrated MUGlu and 20 mL of Triton X-100 in 50 mL of sterile water) is added to each flask (final concentration:165 mg/L). The incubation temperature is 44°C. One hundred microlitres of 2 M NaOH solution is added to each 2.9-mL aliquot to obtain a pH>10 before the fluorescence measurement[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Sperker B, et al. High-performance liquid chromatographic quantification of 4-methylumbelliferyl-beta-D-glucuronide as a probe for human beta-glucuronidase activity in tissue homogenates. J Chromatogr B Biomed Appl. 1996 Oct 11;685(1):181-4.

[2]. Villari P, et al. An evaluation of the use of 4-methylumbelliferyl-beta-D-glucuronide (MUG) in different solid media for the detection and enumeration of Escherichia coli in foods. Lett Appl Microbiol. 1997 Apr;24(4):286-90.

[3]. George I, et al. Use of beta-D-galactosidase and beta-D-glucuronidase activities for quantitative detection of totaland fecal coliforms in wastewater. Can J Microbiol. 2001 Jul;47(7):670-5.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA