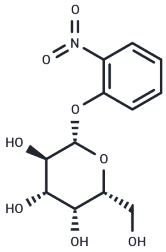
Data Sheet (Cat.No.T19497)

TargetMol

ONPG

Chemical Properties



CAS No. : 369-07-3

Formula: C12H15NO8

Molecular Weight: 301.25

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	ONPG (2-Nitrophenyl β-D-galactopyranoside) is a colorimetric and spectrophotometric substrate used to detect β-galactosidase activity.
Targets(IC50)	Others
In vitro	The enzyme displays high hydrolysis ability for ONPG (100%) and moderate activity for its natural substrate lactose (25.7%). However, the hydrolysis ability of the enzyme towards all other chromogenic nitrophenyl analogues is very weak, indicating that Gal308 is a β-galactosidase with narrow substrate specificity. To investigate the kinetic parameters of recombinant enzyme, the Michaelis-Menten constants (Km), turnover numbers (kcat), and catalytic efficiencies (kcat/Km) of Gal308 for ONPG and lactose are determined. The kcat and Km values are 464.7±7.8 s-1 and 2.7±0.3 mM for ONPG, and 264.2±2.1 s-1 and 7.1±0.8 mM for lactose, respectively. The kcat/Km value of the enzyme for ONPG (172.1 s-1mM-1) is 4.6-fold higher than that for lactose (37.2 s-1mM-1), which clearly demonstrated that the catalytic efficiency of Gal308 for ONPG is much higher than that for lactose[1].

Solubility Information

Solubility	H2O: 7.4 mg/mL (24.56 mM),Sonication is recommended. DMSO: 250 mg/mL (829.88 mM) (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 10 mg/mL (33.2 mM),Solution. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.3195 mL	16.5975 mL	33.195 mL
5 mM	0.6639 mL	3.3195 mL	6.639 mL
10 mM	0.332 mL	1.6598 mL	3.3195 mL
50 mM	0.0664 mL	0.332 mL	0.6639 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

Zhang X, et al. Metagenomic approach for the isolation of a thermostable β-galactosidase with high tolerance of galactose and glucose from soil samples of Turpan Basin. BMC Microbiol. 2013 Oct 24;13:237.