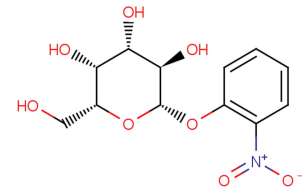


## Data Sheet (Cat.No.T19497)

ONPG

### Chemical Properties

CAS No.:	369-07-3
Formula:	C <sub>12</sub> H <sub>15</sub> NO <sub>8</sub>
Molecular Weight:	301.25
Appearance:	N/A
Storage:	0-4°C for short term (days to weeks), or -20°C for long term (months).



### Biological Description

Description	ONPG is a colorimetric and spectrophotometric substrate used to detect $\beta$ -galactosidase activity.
Targets(IC <sub>50</sub> )	Others: None
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 $\beta$ -galactosidase with narrow substrate specificity. To investigate the kinetic parameters of recombinant enzyme, the Michaelis-Menten constants (K <sub>m</sub> ), turnover numbers (k <sub>cat</sub> ), and catalytic efficiencies (k <sub>cat</sub> /K <sub>m</sub> ) of Gal308 for ONPG and lactose are determined. The k <sub>cat</sub> and K <sub>m</sub> values are 464.7 $\pm$ 7.8 s <sup>-1</sup> and 2.7 $\pm$ 0.3 mM for ONPG, and 264.2 $\pm$ 2.1 s <sup>-1</sup> and 7.1 $\pm$ 0.8 mM for lactose, respectively. The k <sub>cat</sub> /K <sub>m</sub> value of the enzyme for ONPG (172.1 s <sup>-1</sup> mM <sup>-1</sup> ) is 4.6-fold higher than that for lactose (37.2 s <sup>-1</sup> mM <sup>-1</sup> ), which clearly demonstrated that the catalytic efficiency of Gal308 for ONPG is much higher than that for lactose[1].

### Solubility Information

Solubility	H <sub>2</sub> O: 7.4 mg/mL (24.56 mM) ( < 1 mg/ml refers to the product slightly soluble or insoluble)
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#### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.32 mL	16.598 mL	33.195 mL
5 mM	0.664 mL	3.32 mL	6.639 mL
10 mM	0.332 mL	1.66 mL	3.32 mL
50 mM	0.066 mL	0.332 mL	0.664 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 °C for 6 months; - 20 °C for 1 month. Please use it as soon as possible.

#### Reference

1. Zhang X, et al. Metagenomic approach for the isolation of a thermostable  $\beta$ -galactosidase with high tolerance of galactose and glucose from soil samples of Turpan Basin. BMC Microbiol. 2013 Oct 24;13:237. doi: 10.1186/1471-2180-13-237.

Inhibitors · Natural Compounds · Compound Libraries

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