Web: www.taiclone.com
Tel: +886-2-2735-9682
Email: order@taiclone.com

ONPG

Catalog No: tcsc3045

Available Sizes

Size: 1g

Size: 5g

Specifications

CAS No:
369-07-3

Formula:
$C_{12}H_{15}NO_8$

Pathway:
Others

Target:
Others

Purity / Grade:
>98%

Solubility:
H2O : 7.4 mg/mL (24.56 mM; Need ultrasonic)

Alternative Names:
2-Nitrophenyl β-D-galactopyranoside

Observed Molecular Weight:
301.25

Product Description

ONPG is a colorimetric and spectrophotometric substrate for detection of β-galactosidase activity.

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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 (K_m), turnover numbers (k_{cat}), and catalytic efficiencies (k_{cat}/K_m) of Gal308 for ONPG and lactose are determined. The k_{cat} and K_m 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 k_{cat}/K_m value of the enzyme for ONPG (172.1 $s^{-1}mM^{-1}$) is 4.6-fold higher than that for lactose (37.2 $s^{-1}mM^{-1}$), which clearly demonstrated that the catalytic efficiency of Gal308 for ONPG is much higher than that for lactose[1].