



Nitrophenyl β -D-galactopyranoside, ONPG

Enzyme Substrate for β -galactosidase

The chromogenic substrate Nitrophenyl β -D-galactopyranoside is utilized in quantitative investigations and the kinetics of the beta-galactosidase enzyme.

In molecular biology, it is employed in tests to measure the activity of β -galactosidase reporter gene constructs. This test is frequently used in diagnostics to identify *Enterobacteriaceae* family lactose-fermenting bacteria.

Two enzymes are required for lactose utilization: β -galactosidase, which breaks down lactose into galactose and glucose, and β -galactoside permease, which catalyzes the transport of lactose into the cell. Without specificity towards lactose, β -Galactosidase can function on basic galactosides, such as the ONPG substrate. Galactose and o-nitrophenol, a yellow chromogenic molecule, are released upon ONPG hydrolysis. ONPG, does not require an induced or constitutive permease enzyme to enter the cell.

Cat. Number	ASC-1022
CAS Number	369-07-3
MDL Number	MFCD00063255
PubChem	310277967
Molecular Weight	301.2 g/mol
Molecular Formula	C ₁₂ H ₁₅ NO ₈
Storage Temperature	-20°C
Form and Color	White to off-white, Powder
Solubility (1% in Water)	Clear, colorless solution
Specific Optical Rotation	-65 - -73 ° (c=1, water)
Water (KF)	≤ 0.5%
Purity (HPLC)	≥ 98.0%
Synonym	o-Nitrophenyl- β -D-galactoside