Creative Enzymes®

Native Escherichia coli β-Galactosidase

Cat. No. DIA-189

Lot. No. (See product label)

Introduction

Description	β-galactosidase, also called beta-gal or β-gal, is a hydrolase enzyme that catalyzes the hydrolysis of β-galactosides into monosaccharides. Substrates of different β-galactosidases include ganglioside GM1, lactosylceramides, lactose, and various glycoproteins.
Applications	This enzyme is useful for structural investigation of carbohydrates, the determination of lactose (foodstuff analysis) and as an enzyme label for enzyme immunoassay.
Synonyms	β-galactosidase; beta-gal; β-gal; EC 3.2.1.23; lactase; β-lactosidase; maxilact; hydrolact; β-D-lactosidase; S 2107; lactozym; trilactase; β-D-galactanase; oryzatym; sumiklat; β-D-galactoside galactohydrolase

Product Information

Source	Escherichia coli
Appearance	White amorphous powder, lyophilized.
Form	Freeze dried powder
EC Number	EC 3.2.1.23
CAS No.	9031-11-2
Molecular Weight	540 kDa
Activity	GradeⅡ 500U/mg-solid or more
Contaminants	α-galactosidase < 1×10^{-4}% α-glucosidase < 1×10^{-4}% ß-glucosidase < 2×10^{-3}% α-mannosidase < 1×10^{-4}% ß-mannosidase < 1×10^{-4}% proteinase < 10mAbs/mg-P
Isoelectric point	4.61
pH Stability	pH 6.5-8.5 (25°C, 20hr)
Optimum pH	7.0-7.5
Thermal stability	below 50°C (pH 7.3, 15min)
Optimum temperature	50-55°C
Michaelis Constant	3.0×10^{-4}M (o-Nitrophenyl-ß-D-galactoside), 6.7×10^{-5}M (p-Nitrophenyl-ß-D-galactoside), 2.3×10^{-4}M (Phenyl-ß-D-galactoside), 2.5×10^{-3}M (Lactose)
Structure	The enzyme is composed of four identical subunits having a molecular weight of ca.135,000. The amino acid analysis indicates approximately 1,170 residues per subunit.
Specificity	The enzyme specifically hydrolyzes ß-D-galactosyl linkage
Inhibitors	p-Chloromercuribenzoate, Iodoacetamide, heavy metal ions (Zn^{++}, Fe^{+++}, Cd^{++}, Cu^{++}, Pb^{++}, Ag^{+}, Hg^{++}), Ionic detergents (SDS, DAC, etc.)
Stabilizers	Mg^{++}

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Storage and Shipping Information

Stability	Stable at-20°C for at least 6 months