

Datasheet for 0000-17

Beta Galactosidase**Overview**

Description:	Beta Galactosidase Unconjugated - 0000-17
Item No.:	0000-17
Size:	1 mg
Origin:	E. coli
Expressed in:	E. coli

Product Details**Background:**

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. Lactase is often confused as an alternative name for β -galactosidase, but it is actually simply a sub-class of β -galactosidase. β -galactosidase is an exoglycosidase which hydrolyzes the β -glycosidic bond formed between a galactose and its organic moiety. It may also cleave fucosides and arabinosides but with much lower efficiency. It is an essential enzyme in the human body, deficiencies in the protein can result in galactosialidosis or Morquio B syndrome. In E. coli, the gene of β -galactosidase, the lacZ gene, is present as part of the inducible system lac operon which is activated in the presence of lactose when glucose level is low. It is commonly used in molecular biology as a reporter marker to monitor gene expression. It also exhibits a phenomenon called α -complementation which forms the basis for the blue/white screening of recombinant clones. This enzyme can be split in two peptides, LacZ α and LacZ Ω , neither of which is active by itself but when both are present together, spontaneously reassemble into a functional enzyme. This property is exploited in many cloning vectors where the presence of the lacZ α gene in a plasmid can complement in trans another mutant gene encoding the LacZ Ω in specific laboratory strains of E. coli. However, when DNA fragments are inserted in the vector, the production of LacZ α is disrupted, the cells therefore show no β -galactosidase activity. The presence or absence of an active β -galactosidase may be detected by X-gal, which produces a characteristic blue dye when cleaved by β -galactosidase, thereby providing an easy means of distinguishing the presence or absence of cloned product in a plasmid.

Synonyms:	GLB1, Beta-galactosidase, Acid beta-galactosidase, Lactase, Elastin receptor 1
Species of Origin:	E. coli
Expressed in:	E. coli
Reagent Type:	Enzyme

Target Details

Purity/Specificity:	Beta Galactosidase was prepared from chromatographically pure beta-galactosidase (E.coli).
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Application Details

Application Note:	Beta Galactosidase is used as a control in beta-galactosidase based immunological assays.
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Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
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Formulation

Physical State:	Liquid (sterile filtered)
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Concentration:	1.0 mg/mL by UV absorbance at 280 nm
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Buffer:	0.05 M Potassium Phosphate, pH 7.8
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Preservative:	None
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Stabilizer:	10% (w/v) Sucrose
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Shipping & Handling

Shipping Condition:	Wet Ice
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Storage Condition:	Store at 2°-8°C prior to opening.
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Expiration:	Expiration date is one (1) year from date of receipt.
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Disclaimer

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