

# Native E. coli beta Galactosidase protein ab79449

## 2 References

### 製品の詳細

製品名	Native E. coli beta Galactosidase protein
精製度	> 97 % HPLC.
発現系	Escherichia coli
タンパク質長	Full length protein
Animal free	No
由来	Native
生物種	Escherichia coli
製品の詳細	Native <i>E. coli</i> beta Galactosidase protein

### 特性

Our **Abpromise guarantee** covers the use of **ab79449** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

アプリケーション                      Immunoassay

製品の状態                              Liquid

備考                                      *Beta Galactosidase was prepared chromatographically. This product has been sterile filtered. Beta Galactosidase is used as a control in beta-galactosidase based immunological assays.*

Beta-galactosidase, also called beta-gal or Beta-gal, is a hydrolase enzyme that catalyzes the hydrolysis of Beta-galactosides into monosaccharides. Substrates of different Beta-galactosidases include ganglioside GM1, lactosylceramides, lactose, and various glycoproteins. Lactase is often confused as an alternative name for Beta-galactosidase, but it is simply a subclass of Beta-galactosidase. Beta-galactosidase is an exoglycosidase which hydrolyzes the Beta-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 Beta-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 alpha-complementation which forms the basis for the blue/white screening of recombinant clones. This enzyme can be split in two peptides, LacZ-alpha and LacZ-omega 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-alpha gene in a plasmid can complement in trans another mutant gene encoding the LacZ-omega in specific laboratory strains of E. coli. However, when DNA fragments are inserted in the vector, the production of LacZ-alpha is disrupted, the cells therefore show no Beta-galactosidase activity. The presence or absence of an active Beta-galactosidase may be detected by X-gal, which produces a characteristic blue dye when cleaved by Beta-galactosidase, thereby providing an easy means of distinguishing the presence or absence of cloned product in a plasmid.

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## 前処理および保存

### 保存方法および安定性

Shipped at 4°C. Store at +4°C.

Constituents: 0.42% Potassium phosphate, 10% Sucrose

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## 関連情報

### 関連性

Beta galactosidase is coded by a gene (lac z) in the lac operon of Escherichia coli. It is a metalloenzyme that splits lactose into glucose and galactose. It hydrolyzes terminal, non-reducing beta-D-galactose residues in beta-D-galactosides. Activation by cations seems to be substrate dependent. K<sup>+</sup>, Na<sup>+</sup>, NH<sub>4</sub><sup>+</sup>, Rb<sup>+</sup>, Cs<sup>+</sup> and Mn<sup>++</sup> all activate enzyme activity based upon the substrate used.

### 細胞内局在

Cytoplasmic

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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