Product Specification Sheet

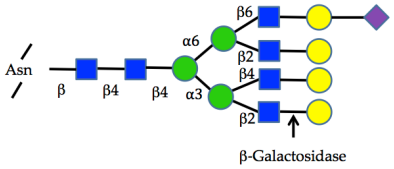
Product Name: β(1,4)-Galactosidase from *Aspergillus oryzae*

EC number: 3.2.1.23
CAS registry number: 9031-11-2
MDL number: MFCD00130623

Catalog Number: FSB5001
Lot Number: 140523

Description

β-Galactosidase (or Lactase) is an exoglycosidase isolated from *Aspergillus oryzae* that catalyzes the hydrolysis of terminal β (1,4)-galactose glycopeptides (1). β-Galactosidase from *Aspergillus oryzae* has been shown to have minimal activity toward β (1,3)-linked galactose residues (2).



Product Information

Quantity:	10 Units
Specific Activity:	>170 U/mg
Purity:	>95% by SDS-PAGE
Molecular Weight:	109.9 kDa
Ext. coefficient:	1.75 (1 mg/mL at 280 nm in H_2O)
Theoretical PI:	5.33
Storage	**Format:** Lyophilized powder **Temperature:** 2-8°C. **Stability:** 1 year
Unit Definition:	One unit is defined as the quantity of enzyme that will hydrolyze one µmole of an o-nitrophenol-β-D-galactopyranoside to o-nitrophenol and D-galactose per minute at 37°C and a pH 4.5. This unit is based on a 15-minute assay.

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Activity Assay

ß-galactosidase can be assayed by measuring hydrolysis of the chromogenic substrate, o-nitrophenyl-ß-Dgalactoside (ONPG) as shown below (3).

Reagents:

Reaction Buffer	100 mM Potassium Phosphate pH 4.5
Substrate	4 mg/mL ONPG (in reaction buffer)
Carbonate	10% (w/v) Sodium Carbonate (in water)
Enzyme	ß-galactosidase (~0.5 Units/mL in distilled water)

Protocol

1. Pipette 2 ml of the ONPG Substrate solution into 2 labeled test tubes for each sample and reagent blank.
2. Place the tubes in the 37° C water bath for a minimum of 10 minutes.
3. At zero time, add 0.5 ml of the Enzyme Preparation (use 0.5 ml distilled water for the reagent blank) to each tube. Vortex the tubes and immediately return them to the bath. Allow sufficient time between injections.
4. Allow the tubes to incubate in the 37° C water bath for exactly 15 minutes.
5. At 15 minutes add 2.5 ml of 10% Sodium Carbonate to stop the reaction. Vortex the tubes vigorously.
6. Add 20 ml of distilled water to each tube after stopping and mix thoroughly of each sample.
7. Using a suitable Spectrophotometer, record and print the Optical Density of each sample at 420nm using distilled water to zero the instrument.

References

1. Tanaka, Y, Kagamiishi, A, Kiuchi, A, Horiuchi, T.J (1975) Purification and properties of beta-galactosidase from *Aspergillus oryzae*. Biochem. 1;77(1?):241-7
2. Zeleny, R., Altmann, F., Praznik, W. (1997) A Capillary Electrophoretic Study on the Specificity of β-Galactosidases from *Aspergillus oryzae, Escherichia coli, Streptococcus pneumoniae*,and *Canavalia ensiformis* (Jack Bean). Anal. Biochem., 246(1):96-101
3. Miller, J. (1972) Experiments in Molecular Genetics, p. 352-355. Cold Spring Harbor Laboratory, NY.

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