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ProductInformation

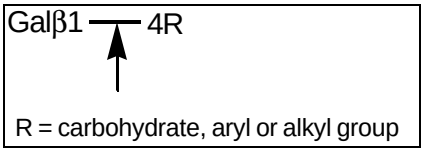
b-Galactosidase
from *E. coli*, recombinant overexpresed in *E. coli*

Product Number **G 3153**
Storage Temperature –20 °C

CAS# 9031-11-2
EC 3.2.1.23
Synonyms: Lactase; β-D-Galactoside galactohydrolase; β-D-Galactopyranosidase; β-Lactosidase

Product Description

The enzyme cleaves terminal galactose residues, which are β-1→4 linked to a monosaccharide, glycopeptide, or oligosaccharide.



Molecular weight: ~540 kDa (tetramer)

pH Optimum:[1] 6.8–7.4

The enzyme requires Mg^{2+} for optimal activity. The enzymatic assay performed by Sigma uses 1 mM $MgCl_2$ in the reaction mixture.

Inhibitors:
- 2-mercaptoethanol[1]
- citrate[1]
- Zn^{2+} ions[2]
- ethanolamine[1]

The enzyme is a lyophilized powder containing phosphate buffer salts and sucrose. It does not contain any substances which may interfere with the derivatization of $-NH_2$ or -SH groups, for example, ammonium salts, primary amines, 2-mercaptoethanol, etc. Thus, an aqueous solution of the lyophilized material can be directly used for derivatization, such as an enzyme label for IgG, without prior dialysis or gel filtration.[3] The protein contains 12–20 moles of free thiol per mole of enzyme.

Specific activity: ≥500 units/mg protein

Unit Definition: One unit will hydrolyze 1 µmole of 2-nitrophenyl β-D-galactopyranoside to 2-nitrophenol and D-galactose per minute at the pH 7.3 and 37 °C.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

It is recommended to store the product at –20 °C, under nitrogen as originally sealed. If stored properly, no significant decrease in either specific activity or in the number of free thiol groups will occur within 12 months. Storage at ambient temperature during shipment does not have any detrimental effect on the product.

References

1. Wallenfels, K., and Weil, R., The Enzymes, Third Edition (Boyer, P.D., ed.), **7**, 617–663 (1972).
2. Wallenfels, K., and Malhotra, O.M., The Enzymes, Second Edition (Boyer, P.D., *et al*., eds.), **4**, 409–430 (1960).
3. O'Sullivan, M.J., *et al*., Ann. Clin. Biochem., **16**, 221-240 (1979).

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