

Bovin beta-1,4-galactosyltransferase 1 (Y289L)

Cat. No. BBGYG-0001

Lot. No. (See product label)

Introduction

Description

Bovin beta-1,4-galactosyltransferase 1 (Y289L) is a mutant galactosyltransferase with broadened donor-substrate specificity that transfers GalNAc or GalNAz to terminal GlcNAc residues.

Applications

Chemoenzymatic labeling of O-GlcNAcylated proteins; glycan engineering; preparation of azide-functionalized glycoconjugates for downstream click-chemistry analysis.

Synonyms

Bovin B4GALT1 (Y289L); GalT Y289L; Y289L beta-1,4-Galactosyltransferase 1

Product Information

Species

Bos taurus (bovine)

Source

Recombinant HEK293 cell expression; C-terminal His tag

Appearance

Colorless to light yellow liquid

Form

Liquid

Molecular Weight

50.8 kDa

Specific Activity

2500 U/mg

Specificity

Transfers GalNAc or GalNAz to terminal GlcNAc residues.

Activators

Mn²⁺

Stabilizers

20% glycerol

Buffer

20 mM Tris-HCl, 200 mM NaCl, pH 7.4

Function

Transfers GalNAc or GalNAz to terminal GlcNAc residues and introduces a reactive azide handle when UDP-GalNAz is used as the donor.

Unit Definition

One unit is defined as the amount of enzyme that transfers 1 nmol of GalNAz from UDP-GalNAz to GlcNAc per minute at 37°C.

Reaction

UDP-GalNAz + terminal GlcNAc acceptor → GalNAz-labeled product + UDP

Notes

The Y289L substitution broadens donor-substrate acceptance to GalNAc and GalNAz.

Protocol

1. Prepare the reaction system with 50 mM Tris-HCl (pH 7.5) and 6 mM MnCl₂. 2. Use a UDP-GalNAz-to-antibody equivalent ratio of 300:1. 3. Set the enzyme-to-antibody addition amount to 5%. 4. Incubate the reaction at 37°C for 48 hours. 5. Transfer the reaction to -25°C to -15°C to stop the reaction, then proceed with sample analysis.

Usage

For chemoenzymatic labeling of O-GlcNAcylated proteins and glycan-modification workflows.

Usage and Packaging

Package	100 µg 1 mg 5 mg 10 mg 50 mg
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Storage and Shipping Information

Storage	Store under the batch-specific recommended conditions.
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