SANTA CRUZ BIOTECHNOLOGY, INC.

β-Gal (148-4): sc-136149

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The human β-galactosidase gene, known as the LacZ gene, maps to chromosome 3p22.3 and encodes a 677 amino acid protein with an optimum functional pH range of 6 to 8. Catalytically active β-galactosidases (β-Gal) is a tetramer of four identical subunits, each with an active site, which can independently catalyze the cleavage of terminal galactose. Monovalent cations have a stimulatory effect on the enzymatic reaction, which likely involves a galactosyl-enzyme complex intermediate. β-Gals are widespread in animals, microorganisms and plants. The LacZ gene is widely used as a reporter gene with a variety of colored or fluorescent compounds capable of being produced from appropriate substrates, such as Xgal, which produces a blue color. For this reason, LacZ is incorporated into numerous plasmid vectors as a marker.

REFERENCES

1. Oshima, A., et al. 1988. Cloning, sequencing, and expression of cDNA for human β-galactosidase. Biochem. Biophys. Res. Commun. 157: 238-244.
2. Morreau, H., et al. 1989. Alternative splicing of β-galactosidase mRNA generates the classic lysosomal enzyme and a β-galactosidase-related protein. J. Biol. Chem. 264: 20655-20663.
3. Draber, P., et al. 1992. Monoclonal antibodies to *Escherichia coli* β-galactosidase and their use for detection and purification of recombinant expression products. Hybridoma 11: 385-390.
4. Slavickova, A., et al. 1993. A novel panel of monoclonal antibodies against β-galactosidase of *Escherichia coli* and its versatility for detection of recombinant expression products. Folia Biologica 38: 350-357.
5. Takano, T. and Yamanouchi, Y. 1993. Assignment of human β-galactosidase-A gene to 3p21.33 by fluorescence *in situ* hybridization. Hum. Genet. 92: 403-404.
6. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 230500. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. LocusLink Report (LocusID: 2720). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: GLB1 (human) mapping to 3p22.3; Glb1 (mouse) mapping to 9 F3.

SOURCE

β-Gal (148-4) is a mouse monoclonal antibody raised against amino acids 148-161 of β-Gal of feline origin.

PRODUCT

Each vial contains 200 µg IgM in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

β-Gal (148-4) is recommended for detection of β-Gal of mouse, rat, human, bovine and feline origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for β-Gal siRNA (h): sc-43792, β-Gal siRNA (m): sc-61342, β-Gal shRNA Plasmid (h): sc-43792-SH, β-Gal shRNA Plasmid (m): sc-61342-SH, β-Gal shRNA (h) Lentiviral Particles: sc-43792-V and β-Gal shRNA (m) Lentiviral Particles: sc-61342-V.

Molecular Weight of β-Gal: 76 kDa.

SELECT PRODUCT CITATIONS

1. Fakhouri, W.D., et al. 2012. MCS9.7 enhancer activity is highly, but not completely, associated with expression of Irf6 and p63. Dev. Dyn. 241: 340-349.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.