SANTA CRUZ BIOTECHNOLOGY, INC.

β-Gal (h): 293T Lysate: sc-159389

BACKGROUND

The human β-galactosidase gene, known as the LacZ gene, maps to chromosome 3p21.33 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

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2. Morreau, H., Galjart, N.J., Gillemans, N., Willemsen, R., van der Horst, G.T. and d'Azzo, A. 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., Slavickova, A., Sladecek, M. and Viklicky, V. 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., Draber, P., Draberova, E., Draber, P. and Viklicky, V. 1993. A novel panel of monoclonal antibodies against β-galactosidase of *Escherichia coli* and its versatility for detection of recombinant expression products. Folia Biol. 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.

PRODUCT

β-Gal (h): 293T Lysate represents a lysate of human β-Gal transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

β-Gal (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive β-Gal antibodies. Recommended use: 10-20 µl per lane.

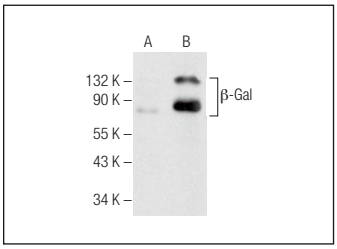
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

β-Gal (B-12): sc-377257 is recommended as a positive control antibody for Western Blot analysis of enhanced human β-Gal expression in β-Gal transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



β-Gal (B-12): sc-377257. Western blot analysis of β-Gal expression in non-transfected: sc-117752 (**A**) and human β-Gal transfected: sc-159389 (**B**) 293T whole cell lysates.

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.