SANTA CRUZ BIOTECHNOLOGY, INC.

β-Gal (C-20): sc-19119

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 with an optimum functional pH range of 6 to 8. Catalytically active β-galactosidaseis (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.

CHROMOSOMAL LOCATION

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

SOURCE

β-Gal (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of β-Gal of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-19119 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

β-Gal (C-20) is recommended for detection of β-Gal of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

β-Gal (C-20) is also recommended for detection of β-Gal in additional species, including equine, canine, bovine, porcine and feline.

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.

Positive Controls: β-Gal (m): 293T Lysate: sc-120387 or β-Gal (h): 293T Lysate: sc-159389.

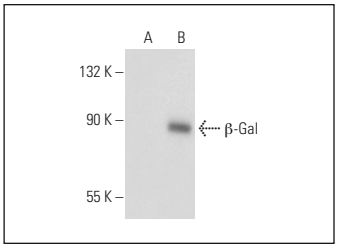
STORAGE

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

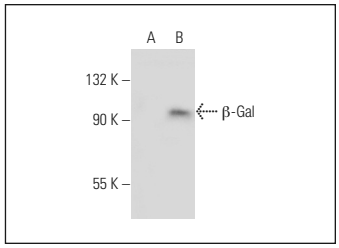
RESEARCH USE

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

DATA



β-Gal (C-20): sc-19119. 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.



β-Gal (C-20): sc-19119. Western blot analysis of β-Gal expression in non-transfected: sc-117752 (**A**) and mouse β-Gal transfected: sc-120387 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Gupta, D., et al. 2008. Improved exercise capacity and reduced systemic inflammation after adenoviral-mediated SERCA2A gene transfer. J. Surg. Res. 145: 257-265.
2. Tuo, B., et al. 2009. Involvement of phosphatidylinositol 3-kinase in cAMP- and cGMP-induced duodenal epithelial CFTR activation in mice. Am. J. Physiol., Cell Physiol. 297: C503-C515.
3. Shimada, H., et al. 2011. Senescence of chondrocytes in aging articular cartilage: GADD45β mediates p21 expression in association with C/EBPβ in senescence-accelerated mice. Pathol. Res. Pract. 207: 225-231.
4. Cherry, T.J., et al. 2011. NeuroD factors regulate cell fate and neurite stratification in the developing retina. J. Neurosci. 31: 7365-7379.
5. Piva, R., et al. 2015. Slug transcription factor and nuclear Lamin B1 are upregulated in osteoarthritic chondrocytes. Osteoarthritis Cartilage 23: 1226-1230.
6. Wang, J.Y., et al. 2015. A central role of TRAX in the ATM-mediated DNA repair. Oncogene. E-published.

PROTOCOLS

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