

β-Galactosidase (40-1a): sc-65670

BACKGROUND

The β-Galactosidase (β-Gal) gene, known as the LacZ gene in bacteria, functions at an optimal pH range of 6 to 8. Catalytically active β-Galactosidase 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-Galactosidases are widespread in animals, microorganisms and plants. The bacterial 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.

SOURCE

β-Galactosidase (40-1a) is a mouse monoclonal antibody raised against full length native β-Galactosidase of *E. coli* origin.

PRODUCT

Each vial contains 200 μg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

β-Galactosidase (40-1a) is available conjugated to agarose (sc-65670 AC), 500 μg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-65670 HRP), 200 μg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-65670 PE), fluorescein (sc-65670 FITC), Alexa Fluor® 488 (sc-65670 AF488), Alexa Fluor® 546 (sc-65670 AF546), Alexa Fluor® 594 (sc-65670 AF594) or Alexa Fluor® 647 (sc-65670 AF647), 200 μg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-65670 AF680) or Alexa Fluor® 790 (sc-65670 AF790), 200 μg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

β-Galactosidase (40-1a) is recommended for detection of β-Galactosidase of *E. coli* 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).

Molecular Weight of β-Galactosidase: 116 kDa.

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

STORAGE

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

DATA



β-Galactosidase (40-1a): sc-65670. Western blot analysis of recombinant β-Galactosidase.

SELECT PRODUCT CITATIONS

- Lee, S.K., et al. 2011. Apurinic/aprimidinic endonuclease 1 inhibits protein kinase C-mediated p66shc phosphorylation and vasoconstriction. *Cardiovasc. Res.* 91: 502-509.
- Shen, T.H., et al. 2012. A BAC-based transgenic mouse specifically expresses an inducible Cre in the urothelium. *PLoS ONE* 7: e35243.
- Jeong, J.H., et al. 2014. Anti-tumoral effect of the mitochondrial target domain of Noxa delivered by an engineered *Salmonella typhimurium*. *PLoS ONE* 9: e80050.
- Huang, D., et al. 2016. Regulation of Hippo signalling by p38 signalling. *J. Mol. Cell Biol.* 8: 328-337.
- Caprioli, D., et al. 2017. Role of dorsomedial striatum neuronal ensembles in incubation of methamphetamine craving after voluntary abstinence. *J. Neurosci.* 37: 1014-1027.
- Ma, Z., et al. 2019. Polarity protein Canoe mediates overproliferation via modulation of JNK, Ras-MAPK and Hippo signalling. *Cell Prolif.* 52: e12529.
- Yan, C., et al. 2019. IRE1 promotes neurodegeneration through autophagy-dependent neuron death in the *Drosophila* model of Parkinson's disease. *Cell Death Dis.* 10: 800.
- Laque, A., et al. 2019. Anti-relapse neurons in the infralimbic cortex of rats drive relapse-suppression by drug omission cues. *Nat. Commun.* 10: 3934.
- Li, Y., et al. 2020. Dual functions of Rack1 in regulating hedgehog pathway. *Cell Death Differ.* 27: 3082-3096.
- Song, K., et al. 2020. PDGFRA in vascular adventitial MSCs promotes neointima formation in arteriovenous fistula in chronic kidney disease. *JCI Insight* 5: e137298.

RESEARCH USE

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