SANTA CRUZ BIOTECHNOLOGY, INC.

GGTase-Iβ (D-11): sc-376854

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Eukaryotic cells contain three distinct prenyltransferases that catalyze the attachment of a thioether-linked 15-carbon farnesyl group or 20-carbon geranylgeranyl group to C-terminal cysteine residues. Geranylgeranyltransferase type I (GGTase-I, PGGTase-I) catalyzes the nucleophilic substitution reaction between geranylgeranyl diphosphate (GGPP) and a protein-derived thiol to form the thioether linkage. The candidate protein contains a C-terminal CAAX motif in which "A" is an aliphatic amino acid and "X" is leucine. Geranylgeranylation is necessary for the TGF-β1 signaling pathway, which involves phosphatidylcholine-specific phospholipase and a protein kinase C. Human GGTase-I contains an α subunit and a β subunit. Geranylgeranyltransferase type II (GGTase-II) is a heterodimer that catalyzes the transfer of two 20-carbon geranylgeranyl groups from geranylgeranyl pyrophosphate onto C-terminal cysteine residues of Rab GTPases, which is required for the activity of Rab proteins. GGTase-II also contains an α subunit and a β subunit.

REFERENCES

1. Schafer, W.R., et al. 1992. Protein prenylation: genes, enzymes, targets, and functions. Annu. Rev. Genet. 26: 209-237.
2. van Bokhoven, H., et al. 1996. cDNA cloning and chromosomal localization of the genes encoding the α- and β-subunits of human Rab geranylgeranyl transferase: the 3' end of the α-subunit gene overlaps with the transglutaminase 1 gene promoter. Genomics 38: 133-140.
3. Online Mendelian Inheritance in Man, OMIM™. 1997. Johns Hopkins University, Baltimore, MD. MIM Number: 602031. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Desnoyers, L., et al. 1998. Single prenyl-binding site on protein prenyl transferases. Proc. Natl. Acad. Sci. USA 95: 12266-12270.

CHROMOSOMAL LOCATION

Genetic locus: PGGT1B (human) mapping to 5q22.3; Pggt1b (mouse) mapping to 18 C.

SOURCE

GGTase-Iβ (D-11) is a mouse monoclonal antibody raised against amino acids 1-220 mapping at the N-terminus of GGTase-Iβ of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GGTase-Iβ (D-11) is available conjugated to agarose (sc-376854 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376854 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376854 PE), fluorescein (sc-376854 FITC), Alexa Fluor® 488 (sc-376854 AF488), Alexa Fluor® 546 (sc-376854 AF546), Alexa Fluor® 594 (sc-376854 AF594) or Alexa Fluor® 647 (sc-376854 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376854 AF680) or Alexa Fluor® 790 (sc-376854 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

GGTase-Iβ (D-11) is recommended for detection of GGTase-Iβ of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

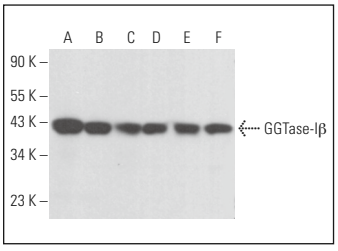
GGTase-Iβ (D-11) is also recommended for detection of GGTase-Iβ in additional species, including equine.

Suitable for use as control antibody for GGTase-Iβ siRNA (h): sc-40882, GGTase-Iβ siRNA (m): sc-40883, GGTase-Iβ siRNA (r): sc-77357, GGTase-Iβ shRNA Plasmid (h): sc-40882-SH, GGTase-Iβ shRNA Plasmid (m): sc-40883-SH, GGTase-Iβ shRNA Plasmid (r): sc-77357-SH, GGTase-Iβ shRNA (h) Lentiviral Particles: sc-40882-V, GGTase-Iβ shRNA (m) Lentiviral Particles: sc-40883-V and GGTase-Iβ shRNA (r) Lentiviral Particles: sc-77357-V.

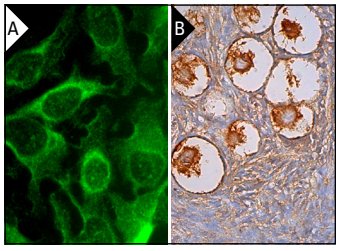
Molecular Weight of GGTase-Iβ: 42 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, c4 whole cell lysate: sc-364186 or Hep G2 cell lysate: sc-2227.

DATA



GGTase-Iβ (D-11): sc-376854. Western blot analysis of GGTase-Iβ expression in PC-12 (**A**), c4 (**B**), RT-4 (**C**), Neuro-2A (**D**), Hep G2 (**E**) and TT (**F**) whole cell lysates.



GGTase-Iβ (D-11): sc-376854. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human ovary tissue showing cytoplasmic staining of follicle cells, ovarian stroma cells and oocytes (**B**).

SELECT PRODUCT CITATIONS

1. Abdullah, M.I., et al. 2017. Inhibition of the mevalonate pathway augments the activity of pitavastatin against ovarian cancer cells. Sci. Rep. 7: 8090.

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.

PROTOCOLS

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