SANTA CRUZ BIOTECHNOLOGY, INC.

GGTase-Iβ (B-11): sc-515131

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 must contain a C-terminal CAAX motif in which "A" is an aliphatic amino acid and "X" is leucine. Geranylgeranylation is necessary for the TGFβ1 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.
5. Song, H.J., et al. 1998. Requirement for geranylgeranyl transferase I and acyl transferase in the TGFβ-stimulated pathway leading to elastin mRNA stabilization. Biochem. Biophys. Res. Commun. 252: 111-116.
6. Clausen, V.A., et al. 2001. Stereochemical analysis of the reaction catalyzed by human protein geranylgeranyl transferase. Biochemistry 40: 3920-3930.

CHROMOSOMAL LOCATION

Genetic locus: PGGT1B (human) mapping to 5q22.3.

SOURCE

GGTase-Iβ (B-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 335-360 at the C-terminus of GGTase-Iβ of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-515131 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

GGTase-Iβ (B-11) is recommended for detection of GGTase-Iβ of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

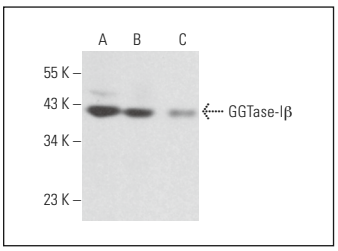
Molecular Weight of GGTase-Iβ: 42 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, RT-4 whole cell lysate: sc-364257 or HL-60 whole cell lysate: sc-2209.

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.

DATA



GGTase-Iβ (B-11): sc-515131. Western blot analysis of GGTase-Iβ expression in HeLa (**A**), RT-4 (**B**) and HL-60 (**C**) whole cell lysates.

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.