

GGTase-I α (C-20): sc-19113

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- β 1 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 TGF β -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: RABGGTA (human) mapping to 14q12; Rabggtg (mouse) mapping to 14 C3.

SOURCE

GGTase-I α (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of GGTase-I α of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-19113 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GGTase-I α (C-20) is recommended for detection of GGTase-I α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

GGTase-I α (C-20) is also recommended for detection of GGTase-I α in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GGTase-I α siRNA (h): sc-40880, GGTase-I α siRNA (m): sc-40881, GGTase-I α shRNA Plasmid (h): sc-40880-SH, GGTase-I α shRNA Plasmid (m): sc-40881-SH, GGTase-I α shRNA (h) Lentiviral Particles: sc-40880-V and GGTase-I α shRNA (m) Lentiviral Particles: sc-40881-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker[™] Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

STORAGE

Store at 4 $^{\circ}$ 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 or our catalog for detailed protocols and support products.


 MONOS
 Satisfaction
 Guaranteed

Try **GGTase-I α (B-9): sc-393545**, our highly recommended monoclonal alternative to GGTase-I α (C-20).