

GGTase-II β (G-12): sc-27404

BACKGROUND

Eukaryotic cells contain 3 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, OMIMTM. 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.
7. Kalinin, A., et al. 2001. Expression of mammalian and its application for *in vitro* prenylation of Rab proteins. *Protein Expr. Purif.* 22: 84-91.

CHROMOSOMAL LOCATION

Genetic locus: RABGGTB (human) mapping to 1p31.1; Rabggtb (mouse) mapping to 3 H3.

SOURCE

GGTase-II β (G-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of GGTase-II β 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-27404 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GGTase-II β (G-12) is recommended for detection of GGTase-II β of human and, to a lesser extent, mouse and rat 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), 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-II β (G-12) is also recommended for detection of GGTase-II β in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GGTase-II β siRNA (h): sc-45437, GGTase-II β siRNA (m): sc-45438, GGTase-II β shRNA Plasmid (h): sc-45437-SH, GGTase-II β shRNA Plasmid (m): sc-45438-SH, GGTase-II β shRNA (h) Lentiviral Particles: sc-45437-V and GGTase-II β shRNA (m) Lentiviral Particles: sc-45438-V.

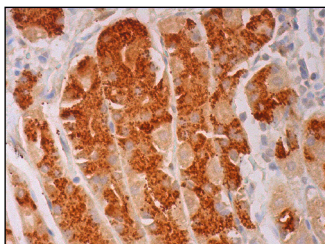
Molecular Weight of GGTase-II β : 43 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

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 MarkerTM compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz MarkerTM 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 UltraCruzTM Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruzTM: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



GGTase-II β (G-12): sc-27404. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lower stomach tissue showing cytoplasmic staining of glandular cells.

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.