

GGPS1 (B-2): sc-271679

BACKGROUND

GGPS1 (geranylgeranyl diphosphate synthase 1), also known as GGPPS, GGPPSase (geranylgeranyl pyrophosphate synthetase) or GGPPS1, is a member of the FPP/GGPP synthetase family of *trans*-prenyltransferases. Predominantly expressed in testis, heart and skeletal muscle, GGPS1 localizes to the cytoplasm and catalyzes the formation of geranylgeranyl pyrophosphate (GGPP), a precursor of geranylgeranylated proteins and carotenoids. GGPP is a major isoprenoid responsible for the C20-prenylation of proteins and the regulation of the nuclear hormone receptor LXR α . More specifically, GGPS1 functions as an oligomeric molecule and mediates the condensation of farnesyl diphosphate (FPP) with isopentenyl diphosphate to yield GGPP. GGPS1 contains five amino acid motifs that are conserved in *trans*-prenyltransferases and three potential N-glycosylation sites.

CHROMOSOMAL LOCATION

Genetic locus: GGPS1 (human) mapping to 1q42.3.

SOURCE

GGPS1 (B-2) is a mouse monoclonal antibody raised against amino acids 1-300 representing full length GGPS1 of human origin.

PRODUCT

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

GGPS1 (B-2) is available conjugated to agarose (sc-271679 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271679 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271679 PE), fluorescein (sc-271679 FITC), Alexa Fluor® 488 (sc-271679 AF488), Alexa Fluor® 546 (sc-271679 AF546), Alexa Fluor® 594 (sc-271679 AF594) or Alexa Fluor® 647 (sc-271679 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271679 AF680) or Alexa Fluor® 790 (sc-271679 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

GGPS1 (B-2) is recommended for detection of GGPS1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 GGPS1 siRNA (h): sc-88605, GGPS1 shRNA Plasmid (h): sc-88605-SH and GGPS1 shRNA (h) Lentiviral Particles: sc-88605-V.

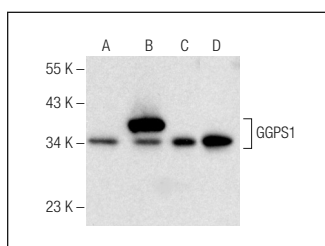
Molecular Weight of GGPS1 monomer: 34 kDa.

Positive Controls: GGPS1 (h): 293T Lysate: sc-371311, HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

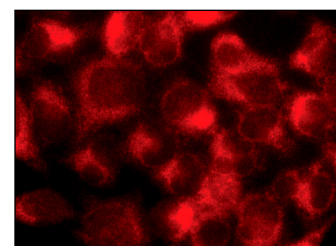
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



GGPS1 (B-2): sc-271679. Western blot analysis of GGPS1 expression in non-transfected 293T: sc-117752 (A), human GGPS1 transfected 293T: sc-371311 (B), HeLa (C) and Jurkat (D) whole cell lysates.



GGPS1 (B-2): sc-271679. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Jiang, C., et al. 2017. GGPP-mediated protein geranylgeranylation in oocyte is essential for the establishment of oocyte-granulosa cell communication and primary-secondary follicle transition in mouse ovary. *PLoS Genet.* 13: e1006535.
- Zhao, D.D., et al. 2019. Evidence for a role of geranylgeranylation in renal angiomyolipoma and renal epithelioid angiomyolipoma. *Oncol. Lett.* 17: 1523-1530.
- Xu, B., et al. 2021. Suppression of MET signaling mediated by pitavastatin and capmatinib inhibits oral and esophageal cancer cell growth. *Mol. Cancer Res.* 19: 585-597.
- Chong, D., et al. 2021. Geranylgeranyl pyrophosphate-mediated protein geranylgeranylation regulates endothelial cell proliferation and apoptosis during vasculogenesis in mouse embryo. *J. Genet. Genomics* 48: 300-311.
- Zheng, F., et al. 2021. Cholesterol metabolic enzyme Ggpps regulates epicardium development and ventricular wall architecture integrity in mice. *J. Mol. Cell Biol.* 13: 445-454.

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.

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