

# GUP1 (Q-16): sc-102584

## BACKGROUND

GUP1 (glycerol uptake/transporter homolog), also designated protein-cysteine N-palmitoyltransferase HHAT-like protein or Hedgehog acyltransferase-like protein, is a 504 amino acid multipass membrane protein of the endoplasmic reticulum that functions as a membrane bound O-acyltransferase. With specific expression in heart, GUP1 negatively regulates amino-terminal palmitoylation of Shh by HHAT, a protein that is required for Shh signaling. Deletion of the gene encoding GUP1 results in higher sensibility to specific sphingolipid biosynthesis inhibitors and resistance to ergosterol biosynthesis inhibitors, indicating that GUP1 is an essential component in lipid metabolism. Also, GUP1 also seems to be important for cell wall assembly and stability due to evidence in *Saccharomyces cerevisiae* GUP1 mutants, which exhibit altered plasma membrane lipid composition and membrane potential.

## REFERENCES

- Hirosawa, M., et al. 1999. Characterization of cDNA clones selected by the GeneMark analysis from size-fractionated cDNA libraries from human brain. *DNA Res.* 6: 329-336.
- Holst, B., et al. 2000. GUP1 and its close homologue GUP2, encoding multimembrane-spanning proteins involved in active glycerol uptake in *Saccharomyces cerevisiae*. *Mol. Microbiol.* 37: 108-124.
- Soejima, H., et al. 2001. Isolation of novel heart-specific genes using the BodyMap database. *Genomics* 74: 115-120.
- Oliveira, R., et al. 2004. Expression studies of GUP1 and GUP2, genes involved in glycerol active transport in *Saccharomyces cerevisiae*, using semi-quantitative RT-PCR. *Curr. Genet.* 46: 140-146.
- Ferreira, C., et al. 2006. Absence of Gup1p in *Saccharomyces cerevisiae* results in defective cell wall composition, assembly, stability and morphology. *FEMS Yeast Res.* 6: 1027-1038.
- Bosson, R., et al. 2006. GUP1 of *Saccharomyces cerevisiae* encodes an O-acyltransferase involved in remodeling of the GPI anchor. *Mol. Biol. Cell* 17: 2636-2645.
- Ferreira, C., et al. 2008. The yeast O-acyltransferase Gup1p interferes in lipid metabolism with direct consequences on the sphingolipid-sterol-ordered domains integrity/assembly. *Biochim. Biophys. Acta* 1778: 2648-2653.

## CHROMOSOMAL LOCATION

Genetic locus: HHATL (human) mapping to 3p22.1; Hhatl (mouse) mapping to 9 F4.

## SOURCE

GUP1 (Q-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GUP1 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-102584 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

GUP1 (Q-16) is recommended for detection of GUP1 of mouse and human origin by Western Blotting (starting dilution 1:200, 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).

GUP1 (Q-16) is also recommended for detection of GUP1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GUP1 siRNA (h): sc-78153, GUP1 siRNA (m): sc-145843, GUP1 shRNA Plasmid (h): sc-78153-SH, GUP1 shRNA Plasmid (m): sc-145843-SH, GUP1 shRNA (h) Lentiviral Particles: sc-78153-V and GUP1 shRNA (m) Lentiviral Particles: sc-145843-V.

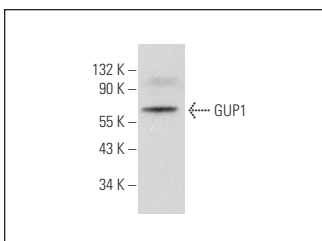
Molecular Weight of GUP1: 57 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



GUP1 (Q-16): sc-102584. Western blot analysis of GUP1 expression in NIH/3T3 whole cell lysate.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.