

ALG1 (N-15): sc-109883

BACKGROUND

ALG1 (asparagine-linked glycosylation 1), also known as HMT1 or HMT1, is a 464 amino acid single-pass type II membrane protein that localizes to the endoplasmic reticulum (ER) and belongs to the glucosyltransferase superfamily. Involved in protein modification, ALG1 catalyzes the formation of the lipid-linked precursor oligosaccharide for N-glycosylation and is involved in assembling the precursor on the cytoplasmic side of the ER. Defects in the gene encoding ALG1 are the cause of congenital disorder of glycosylation type 1K (CDG1K), a severe inherited disease that results in a defect in N-glycosylation and is characterized by nervous system disorders, hypotonia, coagulation disorders and psychomotor retardation.

REFERENCES

- Schwientek, T., et al. 1996. Golgi localization and *in vivo* activity of a mammalian glucosyltransferase (human β 1,4-galactosyltransferase) in yeast. *J. Biol. Chem.* 271: 3398-3405.
- Takahashi, T., et al. 2000. Cloning of the human cDNA which can complement the defect of the yeast mannosyltransferase I-deficient mutant alg 1. *Glycobiology* 10: 321-327.
- Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605907. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Schwarz, M., et al. 2004. Deficiency of GDP-Man:GlcNAc2-PP-dolichol mannosyltransferase causes congenital disorder of glycosylation type Ik. *Am. J. Hum. Genet.* 74: 472-481.
- Kranz, C., et al. 2004. Congenital disorder of glycosylation type Ik (CDG-Ik): a defect of mannosyltransferase I. *Am. J. Hum. Genet.* 74: 545-551.
- Gao, X.D., et al. 2004. Physical interactions between the Alg1, Alg2, and Alg11 mannosyltransferases of the endoplasmic reticulum. *Glycobiology* 14: 559-570.
- Grubemann, C.E., et al. 2004. Deficiency of the first mannosylation step in the N-glycosylation pathway causes congenital disorder of glycosylation type Ik. *Hum. Mol. Genet.* 13: 535-542.
- Samuelson, J., et al. 2005. The diversity of dolichol-linked precursors to Asn-linked glycans likely results from secondary loss of sets of glycosyltransferases. *Proc. Natl. Acad. Sci. USA* 102: 1548-1553.

CHROMOSOMAL LOCATION

Genetic locus: ALG1 (human) mapping to 16p13.3; Alg1 (mouse) mapping to 16 A1.

SOURCE

ALG1 (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of ALG1 of human origin.

STORAGE

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

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-109883 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ALG1 (N-15) is recommended for detection of ALG1 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); non cross-reactive with other ALG family members.

ALG1 (N-15) is also recommended for detection of ALG1 in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for ALG1 siRNA (h): sc-93109, ALG1 siRNA (m): sc-141009, ALG1 shRNA Plasmid (h): sc-93109-SH, ALG1 shRNA Plasmid (m): sc-141009-SH, ALG1 shRNA (h) Lentiviral Particles: sc-93109-V and ALG1 shRNA (m) Lentiviral Particles: sc-141009-V.

Molecular Weight of ALG1: 53 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 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.

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.