

ALG5 (Q-18): sc-83972

BACKGROUND

ALG5 (asparagine-linked glycosylation protein 5), also known as dolichyl-phosphate β -glucosyltransferase, is a 324 amino acid protein belonging to the glucosyltransferase 2 family. Localized to the endoplasmic reticulum membrane, ALG5 is expressed widely in pancreas, placenta, liver, heart, brain, kidney, skeletal muscle and lung. Functionally, ALG5, in conjunction with ALG6, participates in the glucosylation of the oligomannose core in N-linked glycosylation of proteins. The addition of glucose residues to the oligomannose core is critical for optimal substrate recognition and, therefore, is necessary to ensure the efficient transfer of the oligomannose core to nascent glycoproteins. Multiple isoforms of ALG5 exist as a result of alternative splicing events.

REFERENCES

1. Palamarczyk, G., Drake, R., Haley, B. and Lennarz, W.J. 1990. Evidence that the synthesis of glucosylphosphodolichol in yeast involves a 35-kDa membrane protein. *Proc. Natl. Acad. Sci. USA* 87: 2666-2670.
2. Heesen, S., Lehle, L., Weissmann, A. and Aebi, M. 1994. Isolation of the ALG5 locus encoding the UDP-glucose:dolichyl-phosphate glucosyltransferase from *Saccharomyces cerevisiae*. *Eur. J. Biochem.* 224: 71-79.
3. Imbach, T., Burda, P., Kuhnert, P., Wevers, R.A., Aebi, M., Berger, E.G. and Hennet, T. 1999. A mutation in the human ortholog of the *Saccharomyces cerevisiae* ALG6 gene causes carbohydrate-deficient glycoprotein syndrome type-Ic. *Proc. Natl. Acad. Sci. USA* 96: 6982-6987.
4. Shpakov, A.O. 2001. Internal symmetry in nucleotide sequences of genes encoding the dolichol cycle enzymes. *Tsitologiia* 43: 491-500.
5. Abu-Qarn, M. and Eichler, J. 2006. Protein N-glycosylation in Archaea: defining *Haloflex volcanii* genes involved in S-layer glycoprotein glycosylation. *Mol. Microbiol.* 61: 511-525.
6. Online Mendelian Inheritance in Man, OMIM[™]. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 604565. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Haecker, A., Bergman, M., Neupert, C., Moussian, B., Luschnig, S., Aebi, M. and Mannervik, M. 2008. Wollknauel is required for embryo patterning and encodes the *Drosophila* ALG5 UDP-glucose:dolichyl-phosphate glucosyltransferase. *Development* 135: 1745-1749.

CHROMOSOMAL LOCATION

Genetic locus: ALG5 (human) mapping to 13q13.3; Alg5 (mouse) mapping to 3 C.

SOURCE

ALG5 (Q-18) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of ALG5 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 100 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-83972 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ALG5 (Q-18) is recommended for detection of ALG5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

ALG5 (Q-18) is also recommended for detection of ALG5 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for ALG5 siRNA (h): sc-105055, ALG5 siRNA (m): sc-141015, ALG5 shRNA Plasmid (h): sc-105055-SH, ALG5 shRNA Plasmid (m): sc-141015-SH, ALG5 shRNA (h) Lentiviral Particles: sc-105055-V and ALG5 shRNA (m) Lentiviral Particles: sc-141015-V.

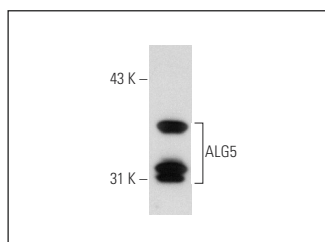
Molecular Weight of ALG5: 38 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

DATA



ALG5 (Q-18): sc-83972. Western blot analysis of ALG5 expression in Hep G2 whole cell lysate.

RESEARCH USE

For research use only, not for use in diagnostic procedures.