SANTA CRUZ BIOTECHNOLOGY, INC.

ALG12 (T-12): sc-86281

BACKGROUND

ALG12 (asparagine-linked glycosylation 12 homolog), also known as ECM39 or membrane protein SB87, is a 488 amino acid member of the glycosyltransferase 22 family that functions as a mannosyltransferase required for proper protein glycosylation. ALG12 is a multi-pass membrane protein that is expressed in fibroblasts and localizes to the endoplasmic reticulum (ER). Specifically, ALG12 catalyzes the addition of α1, 6 mannose to dolichol-linked $Man_7GlcNAc_2$. Defects in ALG12 disrupt protein N-glycosylation and result in congenital disorder of glycosylation type 1G (CDG1G). CDG1G is a multi-system disease characterized by under-glycosylated serum proteins. N-glycoproteins play important roles in cell maintenance, embryonic development and differentiation. A disease affecting the proper function of these proteins can lead to coagulation disorders, psychomotor retardation, hypotonia, immunodeficiency and dysmorphic features.

REFERENCES

1. Burda, P., et al. 1999. Ordered assembly of the asymmetrically branched lipid-linked oligosaccharide in the endoplasmic reticulum is ensured by the substrate specificity of the individual glycosyltransferases. Glycobiology 9: 617-625.
2. Grimme, S.J., et al. 2001. The essential Smp3 protein is required for addition of the side-branching fourth mannose during assembly of yeast glycosylphosphatidylinositols. J. Biol. Chem. 276: 27731-27739.
3. Grubenmann, C.E., et al. 2002. ALG12 mannosyltransferase defect in congenital disorder of glycosylation type Ig. Hum. Mol. Genet. 11: 2331-2339.
4. Chantret, I., et al. 2002. Congenital disorders of glycosylation type Ig is defined by a deficiency in dolichyl-P-mannose:$Man_7GlcNAc_2$-PP-dolichyl mannosyltransferase. J. Biol. Chem. 277: 25815-25822.
5. Zdebska, E., et al. 2003. Abnormal glycosylation of red cell membrane band 3 in the congenital disorder of glycosylation Ig. Pediatr. Res. 54: 224-229.
6. Leal, S., et al. 2004. Transposon mutagenesis of *Trypanosoma brucei* identifies glycosylation mutants resistant to concanavalin A. J. Biol. Chem. 279: 28979-28988.
7. Belanger, K.D., et al. 2005. Nuclear pore complex function in *Saccharomyces cerevisiae* is influenced by glycosylation of the transmembrane nucleoporin Pom152p. Genetics 171: 935-947.

CHROMOSOMAL LOCATION

Genetic locus: ALG12 (human) mapping to 22q13.33; Alg12 (mouse) mapping to 15 E3.

SOURCE

ALG12 (T-12) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of ALG12 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 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-86281 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ALG12 (T-12) is recommended for detection of ALG12 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); non cross-reactive with other ALG family members.

ALG12 (T-12) is also recommended for detection of ALG12 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for ALG12 siRNA (h): sc-72484, ALG12 siRNA (m): sc-141012, ALG12 shRNA Plasmid (h): sc-72484-SH, ALG12 shRNA Plasmid (m): sc-141012-SH, ALG12 shRNA (h) Lentiviral Particles: sc-72484-V and ALG12 shRNA (m) Lentiviral Particles: sc-141012-V.

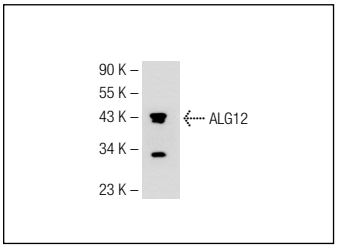
Molecular Weight of ALG12: 55 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

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



ALG12 (T-12): sc-86281. Western blot analysis of ALG12 expression in HeLa whole cell lysate.

RESEARCH USE

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