

# ALG12 (Y-12): sc-86282

## 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  $\alpha$ 1, 6 mannose to dolichol-linked Man7GlcNAc2. 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

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- 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.
- Grubemann, C.E., et al. 2002. ALG12 mannosyltransferase defect in congenital disorder of glycosylation type Ig. *Hum. Mol. Genet.* 11: 2331-2339.
- Chantret, I., et al. 2002. Congenital disorders of glycosylation type Ig is defined by a deficiency in dolichyl-P-mannose: Man7GlcNAc2-PP-dolichyl mannosyltransferase. *J. Biol. Chem.* 277: 25815-25822.
- 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.
- Leal, S., et al. 2004. Transposon mutagenesis of *Trypanosoma brucei* identifies glycosylation mutants resistant to concanavalin A. *J. Biol. Chem.* 279: 28979-28988.

## CHROMOSOMAL LOCATION

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

## SOURCE

ALG12 (Y-12) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of ALG12 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-86282 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

ALG12 (Y-12) is recommended for detection of ALG12 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.

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

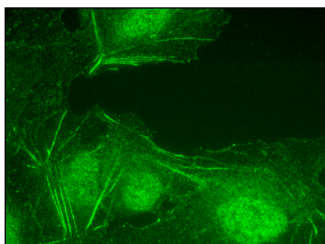
Molecular Weight of ALG12: 55 kDa.

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) 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 (Y-12): sc-86282. Immunofluorescence staining of formalin-fixed HepG2 cells showing membrane localization.

## 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.