## SANTA CRUZ BIOTECHNOLOGY, INC.

# PIG-V (N-14): sc-132036



#### BACKGROUND

Phosphatidylinositol-glycans (PIGs) are multi-pass transmembrane proteins that localize to the endoplasmic reticulum. PIGs exhibit various functions but all are crucial for the biosynthesis of the glycosylphosphatidylinositol (GPI)anchor, which acts as a membrane anchor for many eukaryotic cells. Some PIG proteins are components of the GPI transamidase complex and play a role in the recognition of either the GPI attachment signal or the lipid portion of GPI. Other PIGs belong to the glycosyltransferase complex (GPI-N-acetyl-glucosaminyltransferase or GPI-GnT) and function in the transfer of N-acetyl-glucosamine (GlcNAc) to phosphatidylinositol (PI). A variety of other PIGs play distinct roles in GPI synthesis. PIG-V, a 493 amino acid protein, functions as a mannosyltransferase in GPI anchor biosynthesis.

#### REFERENCES

- Moran, P., Raab, H., Kohr, W.J. and Caras, I.W. 1991. Glycophospholipid membrane anchor attachment. Molecular analysis of the cleavage/attachment site. J. Biol. Chem. 266: 1250-1257.
- Sipos, G., Puoti, A. and Conzelmann, A. 1995. Biosynthesis of the side chain of yeast glycosylphosphatidylinositol anchors is operated by novel mannosyltransferases located in the endoplasmic reticulum and the Golgi apparatus. J. Biol. Chem. 270: 19709-19715.
- Watanabe, R., Murakami, Y., Marmor, M.D., Inoue, N., Maeda, Y., Hino, J., Kangawa, K., Julius, M. and Kinoshita, T. 2000. Initial enzyme for glycosylphosphatidylinositol biosynthesis requires PIG-P and is regulated by DPM2. EMBO J. 19: 4402-4411.
- Maeda, Y., Watanabe, R., Harris, C.L., Hong, Y., Ohishi, K., Kinoshita, K. and Kinoshita, T. 2001. PIG-M transfers the first mannose to glycosylphosphatidylinositol on the lumenal side of the ER. EMBO J. 20: 250-261.
- Ikezawa, H. 2002. Glycosylphosphatidylinositol (GPI)-anchored proteins. Biol. Pharm. Bull. 25: 409-417.
- Kang, J.Y., Hong, Y., Ashida, H., Shishioh, N., Murakami, Y., Morita, Y.S., Maeda, Y. and Kinoshita, T. 2005. PIG-V involved in transferring the second mannose in glycosylphosphatidylinositol. J. Biol. Chem. 280: 9489-9497.
- Ashida, H., Hong, Y., Murakami, Y., Shishioh, N., Sugimoto, N., Kim, Y.U., Maeda, Y. and Kinoshita, T. 2005. Mammalian PIG-X and yeast Pbn1p are the essential components of glycosylphosphatidylinositol-mannosyltransferase I. Mol. Biol. Cell 16: 1439-1448.
- Zhu, Y., Vionnet, C. and Conzelmann, A. 2006. Ethanolaminephosphate side chain added to glycosylphosphatidylinositol (GPI) anchor by mcd4p is required for ceramide remodeling and forward transport of GPI proteins from endoplasmic reticulum to Golgi. J. Biol. Chem. 281: 19830-19839.
- Wiedman, J.M., Fabre, A.L., Taron, B.W., Taron, C.H. and Orlean, P. 2007. *In vivo* characterization of the GPI assembly defect in yeast mcd4-174 mutants and bypass of the Mcd4p-dependent step in mcd4Delta cells. FEMS Yeast Res. 7: 78-83.

### CHROMOSOMAL LOCATION

Genetic locus: PIGV (human) mapping to 1p36.11; Pigv (mouse) mapping to 4 D3.

#### SOURCE

PIG-V (N-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of PIG-V of human origin.

#### PRODUCT

Each vial contains 200  $\mu g$  lgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-132036 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

#### **APPLICATIONS**

PIG-V (N-14) is recommended for detection of PIG-V 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).

PIG-V (N-14) is also recommended for detection of PIG-V in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for PIG-V siRNA (h): sc-88579, PIG-V siRNA (m): sc-152256, PIG-V shRNA Plasmid (h): sc-88579-SH, PIG-V shRNA Plasmid (m): sc-152256-SH, PIG-V shRNA (h) Lentiviral Particles: sc-88579-V and PIG-V shRNA (m) Lentiviral Particles: sc-152256-V.

Molecular Weight of PIG-V: 56 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) Immunofluo-rescence: 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.

#### **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 or our catalog for detailed protocols and support products.