SANTA CRUZ BIOTECHNOLOGY, INC.

PIG-F (V-15): sc-54307

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. 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 and function in the transfer of N-acetylglucosamine (GlcNAc) to phosphatidylinositol (PI). A variety of other PIGs play distinct roles in GPI synthesis. PIG-F functions as an auxiliary subunit of ethanolamine phosphate (EtNP) transferases. It associates with PIG-O and is required for its expression and stability. Together these two PIGs function as an EtNP transferase and catalyze the transfer of EtNP to the third mannose (Man-3) of GPI. A mutation in the gene encoding PIG-F may result in a block of EtNP addition to Man-3 and lead to an absence of GPI-anchored proteins.

REFERENCES

1. Inoue, N., Kinoshita, T., Orii, T. and Takeda, J. 1993. Cloning of a human gene, PIG-F, a component of glycosylphosphatidylinositol anchor biosynthesis, by a novel expression cloning strategy. J. Biol. Chem. 268: 6882-6885.
2. Taron, C.H., Wiedman, J.M., Grimme, S.J. and Orlean, P. 2000. Glycosylphosphatidylinositol biosynthesis defects in Gpi11p- and Gpi13p-deficient yeast suggest a branched pathway and implicate Gpi13p in phosphoethanolamine transfer to the third mannose. Mol. Biol. Cell 11: 1611-1630.
3. Hong, Y., Maeda, Y., Watanabe, R., Inoue, N., Ohishi, K. and Kinoshita, T. 2000. Requirement of PIG-F and PIG-O for transferring phosphoethanolamine to the third mannose in glycosylphosphatidylinositol. J. Biol. Chem. 275: 20911-20919.
4. Delorenzi, M., Sexton, A., Shams-Eldin, H., Schwarz, R.T., Speed, T. and Schofield, L. 2002. Genes for glycosylphosphatidylinositol toxin biosynthesis in plasmodium falciparum. Infect. Immun. 70: 4510-4522.
5. Murakami, Y., Siripanyapinyo, U., Hong, Y., Kang, J.Y., Ishihara, S., Nakakuma, H., Maeda, Y. and Kinoshita, T. 2003. PIG-W is critical for inositol acylation but not for flipping of glycosylphosphatidylinositol-anchor. Mol. Biol. Cell 14: 4285-4295.
6. Shishioh, N., Hong, Y., Ohishi, K., Ashida, H., Maeda, Y. and Kinoshita, T. 2005. GPI7 is the second partner of PIG-F and involved in modification of glycosylphosphatidylinositol. J. Biol. Chem. 280: 9728-9734.
7. Bowman, S.M., Piwowar, A., Al Dabbous, M., Vierula, J. and Free, S.J. 2006. Mutational analysis of the glycosylphosphatidylinositol GPI anchor pathway demonstrates that GPI-anchored proteins are required for cell wall biogenesis and normal hyphal growth in Neurospora crassa. Eukaryotic. Cell 5: 587-600.
8. Pittet, M. and Conzelmann, A. 2007. Biosynthesis and function of GPI proteins in the yeast *Saccharomyces cerevisiae*. Biochim. Biophys. Acta 1771: 405-420.

CHROMOSOMAL LOCATION

Genetic locus: PIGF (human) mapping to 2p21; Pigf (mouse) mapping to 17 E4-E5.

SOURCE

PIG-F (V-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PIG-F of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-54307 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PIG-F (V-15) is recommended for detection of PIG-F 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-F (V-15) is also recommended for detection of PIG-F in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PIG-F siRNA (h): sc-72326, PIG-F siRNA (m): sc-72327, PIG-F shRNA Plasmid (h): sc-72326-SH, PIG-F shRNA Plasmid (m): sc-72327-SH, PIG-F shRNA (h) Lentiviral Particles: sc-72326-V and PIG-F shRNA (m) Lentiviral Particles: sc-72327-V.

Molecular Weight of PIG-F: 20 kDa.

Positive Controls: BYDP whole cell lysate: sc-364368.

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.

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.