SANTA CRUZ BIOTECHNOLOGY, INC.

PIG-O (N-14): sc-165242

BACKGROUND

Phosphatidylinositol-glycans (PIGs) are transmembrane proteins that localize to endoplasmic reticulum. PIGs exhibit a variety of functions, but all are crucial for 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 (GPI-N-acetylglucosaminyltransferase or GPI-GnT) and function in the transfer of N-acetylglucosamine (GlcNAc) to phosphatidylinositol (PI). An array of PIGs play distinct roles in GPI synthesis. PIG-O (phosphatidylinositol glycan anchor biosynthesis, class O), also known as GPI ethanolamine phosphate transferase 3, is a 1,089 amino acid protein that exists as two alternatively spliced isoforms. Associating with PIG-F for stabilization, PIG-O functions as an ethanolamine phosphate (EtNP) transferase and catalyzes the transfer of EtNP to the GPI third mannose, which links the GPI-anchor to the protein C-terminus by an amide bond.

REFERENCES

1. Kawagoe, K., et al. 1996. Glycosylphosphatidylinositol-anchor-deficient mice: implications for clonal dominance of mutant cells in paroxysmal nocturnal hemoglobinuria. Blood 87: 3600-3606.
2. Kinoshita, T., et al. 2000. Dissecting and manipulating the pathway for glycosylphos-phatidylinositol-anchor biosynthesis. Curr. Opin. Chem. Biol. 4: 632-638.
3. Hong, Y., et al. 2000. Requirement of PIG-F and PIG-O for transferring phosphoethanolamine to the third mannose in glycosylphosphatidylinositol. J. Biol. Chem. 275: 20911-20919.
4. Maeda, Y., et al. 2001. PIG-M transfers the first mannose to glycosylphosphatidylinositol on the lumenal side of the ER. EMBO J. 20: 250-261.
5. Eisenhaber, B., et al. 2003. Enzymes and auxiliary factors for GPI lipid anchor biosynthesis and post-translational transfer to proteins. Bioessays 25: 367-385.
6. Kang, J.Y., et al. 2005. PIG-V involved in transferring the second mannose in glycosylphosphatidylinositol. J. Biol. Chem. 280: 9489-9497.
7. Shishioh, N., et al. 2005. GPI7 is the second partner of PIG-F and involved in modification of glycosylphosphatidylinositol. J. Biol. Chem. 280: 9728-9734.
8. Kinoshita, T., et al. 2008. Biosynthesis, remodelling and functions of mammalian GPI-anchored proteins: recent progress. J. Biochem. 144: 287-294.

CHROMOSOMAL LOCATION

Genetic locus: PIGO (human) mapping to 9p13.3; Pigo (mouse) mapping to 4 A5.

SOURCE

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

RESEARCH USE

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

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-165242 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

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

Suitable for use as control antibody for PIG-O siRNA (h): sc-92756, PIG-O siRNA (m): sc-152255, PIG-O shRNA Plasmid (h): sc-92756-SH, PIG-O shRNA Plasmid (m): sc-152255-SH, PIG-O shRNA (h) Lentiviral Particles: sc-92756-V and PIG-O shRNA (m) Lentiviral Particles: sc-152255-V.

Molecular Weight of PIG-O isoforms: 119/74 kDa.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.