

PIG-Z (C-14): sc-99592

BACKGROUND

Several cell surface proteins are attached to the membrane through their C-terminal domain and a glycosylphosphatidylinositol (GPI) moiety. Phosphatidylinositol-glycans (PIGs) are multi-pass transmembrane proteins that localize to the endoplasmic reticulum. PIGs are crucial for the synthesis of very early intermediates in GPI-anchor biosynthesis. PIG-Z (phosphatidylinositol-glycan biosynthesis class Z protein), also known as GPI mannosyltransferase 4 and SMP3, is a 579 amino acid endoplasmic reticular protein that transfers the fourth mannose to some trimannosyl-GPIs during GPI precursor assembly. Since the presence of a fourth mannose in GPI is rarely detected, it is likely that it only exists in certain tissues. PIG-Z is widely expressed at very low levels, with highest expression in colon and brain.

REFERENCES

1. Udenfriend, S. and Kodukula, K. 1995. How glycosylphosphatidylinositol-anchored membrane proteins are made. *Annu. Rev. Biochem.* 64: 563-591.
2. Kinoshita, T., Ohishi, K. and Takeda, J. 1997. GPI-anchor synthesis in mammalian cells: genes, their products, and a deficiency. *J. Biochem.* 122: 251-257.
3. Grimme, S.J., Westfall, B.A., Wiedman, J.M., Taron, C.H. and Orlean, P. 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.
4. Oriol, R., Martinez-Duncker, I., Chantret, I., Mollicone, R. and Codogno, P. 2002. Common origin and evolution of glycosyltransferases using Dol-P-monosaccharides as donor substrate. *Mol. Biol. Evol.* 19: 1451-1463.
5. Taron, B.W., Colussi, P.A., Wiedman, J.M., Orlean, P. and Taron, C.H. 2004. Human Smp3p adds a fourth mannose to yeast and human glycosylphosphatidylinositol precursors *in vivo*. *J. Biol. Chem.* 279: 36083-36092.
6. Grimme, S.J., Colussi, P.A., Taron, C.H. and Orlean, P. 2004. Deficiencies in the essential Smp3 mannosyltransferase block glycosylphosphatidylinositol assembly and lead to defects in growth and cell wall biogenesis in *Candida albicans*. *Microbiology* 150: 3115-3128.
7. Online Mendelian Inheritance in Man, OMIM[™]. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611671. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
8. Gristwood, T., Fineran, P.C., Everson, L. and Salmond, G.P. 2008. PIG-Z, a TetR/AcrR family repressor, modulates secondary metabolism via the expression of a putative four-component resistance-nodulation-cell-division efflux pump, ZrpADBC, in *Serratia* sp. ATCC 39006. *Mol. Microbiol.* 69: 418-435.

CHROMOSOMAL LOCATION

Genetic locus: PIGZ (human) mapping to 3q29; Pigz (mouse) mapping to 16 B2.

SOURCE

PIG-Z (C-14) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of PIG-Z of human origin.

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-99592 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PIG-Z (C-14) is recommended for detection of PIG-Z 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 PIG family members.

Suitable for use as control antibody for PIG-Z siRNA (h): sc-78225, PIG-Z siRNA (m): sc-152260, PIG-Z shRNA Plasmid (h): sc-78225-SH, PIG-Z shRNA Plasmid (m): sc-152260-SH, PIG-Z shRNA (h) Lentiviral Particles: sc-78225-V and PIG-Z shRNA (m) Lentiviral Particles: sc-152260-V.

Molecular Weight of PIG-Z: 63 kDa.

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.

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.