SANTA CRUZ BIOTECHNOLOGY, INC.

PIG-T (h): 293T Lysate: sc-112231



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 (GPIT) 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-T is a component of GPIT, a multi-subunit membrane-bound complex that recognizes the C-terminal signal sequences on proproteins, cleaves them and replaces them with specific GPI lipids. PIG-T is disulfide-linked to PIG-K and functions to stabilize the complex and promote GPIT activity. Overexpression of PIG-T is associated with breast cancer.

REFERENCES

- 1. Nagamune, K., et al. 2003. GPI transamidase of *Trypanosoma brucei* has two previously uncharacterized (trypanosomatid transamidase 1 and 2) and three common subunits. Proc. Natl. Acad. Sci. USA 100: 10682-10687.
- Hong, Y., et al. 2003. Human PIG-U and yeast Cdc91p are the fifth subunit of GPI transamidase that attaches GPI-anchors to proteins. Mol. Biol. Cell 14: 1780-1789.
- Ohishi, K., et al. 2003. Two subunits of glycosylphosphatidylinositol transamidase, GPI8 and PIG-T, form a functionally important intermolecular disulfide bridge. J. Biol. Chem. 278: 13959-13967.
- Vainauskas, S. and Menon, A.K. 2004. A conserved proline in the last transmembrane segment of GAA1 is required for glycosylphosphatidylinositol (GPI) recognition by GPI transamidase. J. Biol. Chem. 279: 6540-6545.
- Wu, G., et al. 2006. Overexpression of glycosylphosphatidylinositol (GPI) transamidase subunits phosphatidylinositol glycan class T and/or GPI anchor attachment 1 induces tumorigenesis and contributes to invasion in human breast cancer. Cancer Res. 66: 9829-9836.
- Bowman, S.M., et al. 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.
- 7. Ho, J.C., et al. 2006. Increased expression of glycosyl-phosphatidylinositol anchor attachment protein 1 (GPAA1) is associated with gene amplification in hepatocellular carcinoma. Int. J. Cancer 119: 1330-1337.
- Nicholson, T.B. and Stanners, C.P. 2007. Identification of a novel functional specificity signal within the GPI anchor signal sequence of carcinoembryonic antigen. J. Cell Biol. 177: 211-218.
- Pittet, M. and Conzelmann, A. 2007. Biosynthesis and function of GPI proteins in the yeast *Saccharomyces cerevisiae*. Biochim. Biophys. Acta 1771: 405-420.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

CHROMOSOMAL LOCATION

Genetic locus: PIGT (human) mapping to 20q13.12.

PRODUCT

PIG-T (h): 293T Lysate represents a lysate of human PIG-T transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

PIG-T (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive PIG-T antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-tranfected 293T cells.

RESEARCH USE

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

PROTOCOLS

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