

POFUT1 (m): 293T Lysate: sc-127362

BACKGROUND

Glycosyltransferases that mediate the regio- and stereoselective transfer of sugars, such as the fucosyltransferases, determine cell surface-carbohydrate profiles, which is an essential interface for biological recognition processes. Fucosyltransferases catalyze the covalent association of fucose to different positional linkages in sugar acceptor molecules. POFUT1 (protein O-fucosyltransferase 1), also known as FUT12, O-FUT or O-FucT-1, is a 388 amino acid protein that localizes to the endoplasmic reticulum and belongs to the fucosyltransferase subfamily of glycosyltransferases. Highly expressed in pancreas, kidney, lung, heart, brain, liver, placenta and skeletal muscle, POFUT1 uses manganese to catalyze the attachment (specifically the O-glycosidic linkage) of fucose to a conserved serine or threonine residue on a protein acceptor. Via its catalytic activity, POFUT1 plays an important role in notch signaling, as notch ligands can serve as POFUT1 substrates. Two isoforms of POFUT1 exist due to alternative splicing events.

REFERENCES

1. Wang, Y., et al. 1996. Identification of a GDP-L-fucose:polypeptide fucosyltransferase and enzymatic addition of O-linked fucose to EGF domains. *Glycobiology* 6: 837-842.
2. Wang, Y. and Spellman, M.W. 1998. Purification and characterization of a GDP-fucose:polypeptide fucosyltransferase from Chinese hamster ovary cells. *J. Biol. Chem.* 273: 8112-8118.
3. Wang, Y., et al. 2001. Modification of epidermal growth factor-like repeats with O-fucose. Molecular cloning and expression of a novel GDP-fucose protein O-fucosyltransferase. *J. Biol. Chem.* 276: 40338-40345.
4. Panin, V.M., et al. 2002. Notch ligands are substrates for protein O-fucosyltransferase-1 and fringe. *J. Biol. Chem.* 277: 29945-29952.
5. Shi, S. and Stanley, P. 2003. Protein O-fucosyltransferase 1 is an essential component of notch signaling pathways. *Proc. Natl. Acad. Sci. USA* 100: 5234-5239.
6. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 607491. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Luo, Y. and Haltiwanger, R.S. 2005. O-fucosylation of notch occurs in the endoplasmic reticulum. *J. Biol. Chem.* 280: 11289-11294.
8. Stahl, M., Uemura, K., Ge, C., Shi, S., Tashima, Y. and Stanley, P. 2008. Roles of POFUT1 and O-fucose in mammalian notch signaling. *J. Biol. Chem.* 283: 13638-13651.
9. Kim, M.L., et al. 2008. O-fucosylation of muscle Agrin determines its ability to cluster acetylcholine receptors. *Mol. Cell. Neurosci.* 39: 452-464.

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.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: Pofut1 (mouse) mapping to 2 H1.

PRODUCT

POFUT1 (m): 293T Lysate represents a lysate of mouse POFUT1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

POFUT1 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive POFUT1 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-transfected 293T cells.

RESEARCH USE

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