SANTA CRUZ BIOTECHNOLOGY, INC.

POFUT1 (H-280): sc-98435

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 cataytic 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/

CHROMOSOMAL LOCATION

Genetic locus: POFUT1 (human) mapping to 20q11.21; Pofut1 (mouse) mapping to 2 H1.

SOURCE

POFUT1 (H-280) is a rabbit polyclonal antibody raised against amino acids 21-300 mapping near the N-terminus of POFUT1 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.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

POFUT1 (H-280) is recommended for detection of POFUT1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

Suitable for use as control antibody for POFUT1 siRNA (h): sc-76184, POFUT1 siRNA (m): sc-76185, POFUT1 shRNA Plasmid (h): sc-76184-SH, POFUT1 shRNA Plasmid (m): sc-76185-SH, POFUT1 shRNA (h) Lentiviral Particles: sc-76184-V and POFUT1 shRNA (m) Lentiviral Particles: sc-76185-V.

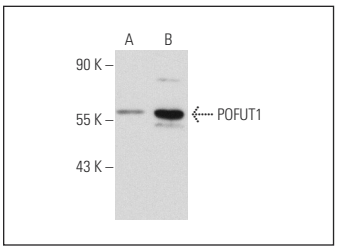
Molecular Weight of POFUT1: 44 kDa.

Positive Controls: POFUT1 (m): 293T Lysate: sc-127362, JAR cell lysate: sc-2276 or Hep G2 cell lysate: sc-2227.

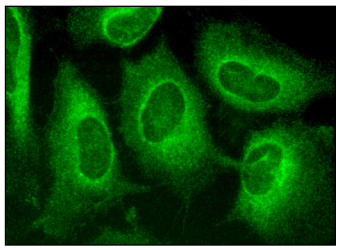
RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



POFUT1 (H-280): sc-98435. Western blot analysis of POFUT1 expression in non-transfected: sc-117752 (**A**) and mouse POFUT1 transfected: sc-127362 (**B**) 293T whole cell lysates.



POFUT1 (H-280): sc-98435. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

RESEARCH USE

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