SANTA CRUZ BIOTECHNOLOGY, INC.

POFUT1 (F-7): sc-271026

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.

CHROMOSOMAL LOCATION

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

SOURCE

POFUT1 (F-7) is a mouse monoclonal antibody raised against amino acids 21-300 mapping near the N-terminus of POFUT1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

POFUT1 (F-7) is available conjugated to agarose (sc-271026 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271026 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271026 PE), fluorescein (sc-271026 FITC), Alexa Fluor® 488 (sc-271026 AF488), Alexa Fluor® 546 (sc-271026 AF546), Alexa Fluor® 594 (sc-271026 AF594) or Alexa Fluor® 647 (sc-271026 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271026 AF680) or Alexa Fluor® 790 (sc-271026 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

POFUT1 (F-7) is recommended for detection of POFUT1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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.

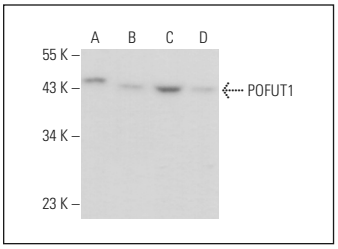
Molecular Weight of POFUT1: 44 kDa.

Positive Controls: U-87 MG cell lysate: sc-2411, Hep G2 cell lysate: sc-2227 or JAR whole cell lysate: sc-2276.

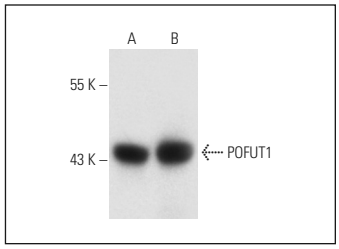
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



POFUT1 (F-7): sc-271026. Western blot analysis of POFUT1 expression in Hep G2 (**A**), HEL 92.1.7 (**B**), U-87 MG (**C**) and NIH/3T3 (**D**) whole cell lysates.



POFUT1 (F-7): sc-271026. Western blot analysis of POFUT1 expression in Hep G2 (**A**) and JAR (**B**) whole cell lysates.

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 for detailed protocols and support products.