

# POFUT1 Antibody

Catalog # ASC10751

## Product Information

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<b>Application</b>	WB, E, IHC-P
<b>Primary Accession</b>	<a href="#">Q9H488</a>
<b>Other Accession</b>	<a href="#">NP_056167</a> , <a href="#">27436889</a>
<b>Reactivity</b>	Human, Mouse
<b>Host</b>	Rabbit
<b>Clonality</b>	Polyclonal
<b>Isotype</b>	IgG
<b>Calculated MW</b>	43956
<b>Concentration (mg/ml)</b>	1 mg/mL
<b>Conjugate</b>	Unconjugated
<b>Application Notes</b>	POFUT1 antibody can be used for the detection of POFUT1 by Western blot at 0.5 - 1 $\mu$ g/mL. Antibody can also be used for immunohistochemistry starting at 2.5 $\mu$ g/mL.

## Additional Information

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<b>Gene ID</b>	23509
<b>Other Names</b>	GDP-fucose protein O-fucosyltransferase 1, 2.4.1.221, Peptide-O-fucosyltransferase 1, O-FucT-1, POFUT1, FUT12, KIAA0180
<b>Target/Specificity</b>	POFUT1; At least two isoforms of POFUT1 are known to exist. This antibody is predicted to not cross-react with POFUT2.
<b>Reconstitution &amp; Storage</b>	POFUT1 antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
<b>Precautions</b>	POFUT1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## Protein Information

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<b>Name</b>	POFUT1
<b>Synonyms</b>	FUT12, KIAA0180
<b>Function</b>	Catalyzes the reaction that attaches fucose through an O-glycosidic linkage to a conserved serine or threonine residue found in the consensus sequence C2-X(4,5)-[S/T]-C3 of EGF domains, where C2 and C3 are the second and third conserved cysteines. Specifically uses GDP-fucose as donor substrate and proper disulfide pairing of the substrate EGF domains is required for fucose transfer. Plays a crucial role in NOTCH signaling. Initial fucosylation of NOTCH

by POFUT1 generates a substrate for FRINGE/RFNG, an acetylglucosaminyltransferase that can then extend the fucosylation on the NOTCH EGF repeats. This extended fucosylation is required for optimal ligand binding and canonical NOTCH signaling induced by DLL1 or JAGGED1. Fucosylates AGRN and determines its ability to cluster acetylcholine receptors (AChRs).

<b>Cellular Location</b>	Endoplasmic reticulum {ECO:0000250   UniProtKB:Q6EV70}
<b>Tissue Location</b>	Highly expressed in heart, brain, placenta, lung, liver, skeletal muscle, kidney and pancreas

## Background

**POFUT1 Antibody:** POFUT1, an endoplasmic reticulum-residing member of the glycosyltransferase O-Fuc family, adds O-fucose through an O-glycosidic linkage to conserved serine or threonines in epidermal growth factor-like repeats of several cell surface and secreted proteins. Unlike its homolog POFUT2, POFUT1 can also catalyze the transfer of fucose to thrombospondin type 1 repeats. Many of the substrates of POFUT1 are involved in ligand-induced receptor signaling. One such protein is Notch; mouse ES cells lacking POFUT have normal levels of Notch receptors at the cell surface, but these receptors do not bind Notch ligands or exhibit Notch signaling.

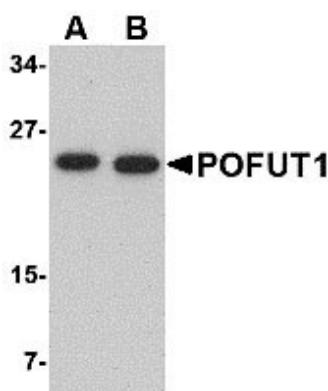
## References

Wang Y, Shao L, Shi S, et al. 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.* 2001; 276:40338-45.

Loriol C, Dupuy F, Rampal R, et al. Molecular evolution of protein O-fucosyltransferase genes and splice variants. *Glycobiology* 2006; 16:736-47.

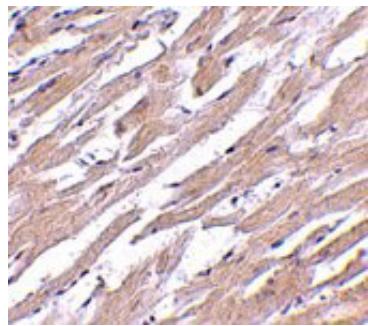
Stahl M, Uemura K, Ge C, et al. Roles of POFUT1 and O-fucose in mammalian Notch signaling. *J. Biol. Chem.* 2008; 283:13638-51.

## Images



Western blot analysis of POFUT1 in human heart tissue lysate with POFUT1 antibody at (A) 0.5 and (B) 1  $\mu$ g/mL.

Immunohistochemistry of POFUT1 in human heart tissue with POFUT antibody at 2.5  $\mu$ g/mL.



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