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DPAGT1 Antibody

Catalog # ASC11373

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q9H3H5
Other Accession	NP_001373, 42794009
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	46090
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	DPAGT1 antibody can be used for detection of DPAGT1 by Western blot at 1 g/mL. Antibody can also be used for immunohistochemistry starting at 2.5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	1798
Other Names	UDP-N-acetylglucosamine--dolichyl-phosphate N-acetylglucosaminephosphotransferase, 2.7.8.15, GlcNAc-1-P transferase, G1PT, GPT, N-acetylglucosamine-1-phosphate transferase, DPAGT1, DPAGT2
Target/Specificity	DPAGT1; At least four isoforms of DPAGT1 are known to exist; this antibody will recognize the two longest isoforms. DPAGT1 antibody is predicted to not cross-react with UHRF1BP1.
Reconstitution & Storage	DPAGT1 antibody can be stored at 4℃ for three months and -20℃, 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.
Precautions	DPAGT1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	GPT
Function	UDP-N-acetylglucosamine--dolichyl-phosphate N-acetylglucosaminephosphotransferase that operates in the biosynthetic pathway of dolichol-linked oligosaccharides, the glycan precursors employed in protein asparagine (N)-glycosylation. The assembly of dolichol-linked oligosaccharides begins on the cytosolic side of the endoplasmic reticulum membrane and finishes in its lumen. The sequential addition of sugars to

	dolichol pyrophosphate produces dolichol-linked oligosaccharides containing fourteen sugars, including two GlcNAcs, nine mannoses and three glucoses. Once assembled, the oligosaccharide is transferred from the lipid to nascent proteins by oligosaccharyltransferases. Catalyzes the initial step of dolichol-linked oligosaccharide biosynthesis, transferring GlcNAc-1-P from cytosolic UDP-GlcNAc onto the carrier lipid dolichyl phosphate (P- dolichol), yielding GlcNAc-P-P-dolichol embedded in the cytoplasmic leaflet of the endoplasmic reticulum membrane.
Cellular Location	Endoplasmic reticulum membrane {ECO:0000250|UniProtKB:P23338}; Multi-pass membrane protein

Background

DPAGT1 Antibody: The UDP-N-acetylglucosamine-dolichyl-phosphate N-acetyl-glucosaminephosphotransferase (DPAGT1) is an enzyme that catalyzes the first step in the dolichol-linked oligosaccharide pathway for glycoprotein biosynthesis. Mutations in this integral endoplasmic reticulum (ER) membrane protein enzyme belongs to the glycosyltransferase family 4 results in the congenital disorder of glycosylation type Ij with symptoms such as severe hypotonia, medically intractable seizures, mental retardation, microcephaly, and exotropia. Recent experiments have shown that DPAGT1 is a target of the Wnt/beta-catenin signaling pathway, with Wnt3a inducing higher DPAGT1 mRNA expression.

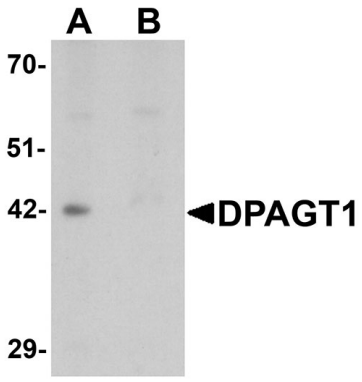
References

Wu X, Rush JS, Karaoglu D, et al. Deficiency of UDP-GlcNAc:Dolichol Phosphate N-Acetylglucosamine-1 Phosphate Transferase (DPAGT1) causes a novel congenital disorder of glycosylation type Ij. Hum. Mutat. 2003; 22:144-50.

Bretthauer RK. Structure, expression, and regulation of UDP-GlcNAc:dolichol phosphate GlcNAc-1-phosphate transferase (DPAGT1). Curr. Drug Targets 2009; 10:477-82

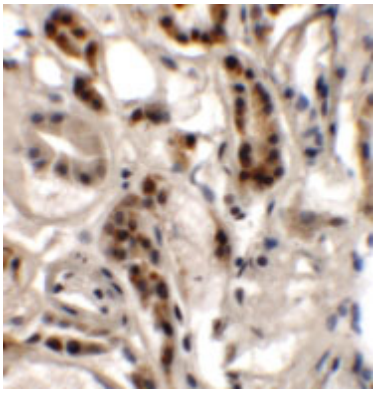
Sengupta PK, Bouchie MP, and Kukuruzinska MA. N-glycosylation gene DPAGT1 is a target of the Wnt/beta-catenin signaling pathway. J. Biol. Chem. 2010; 285:31164-73.

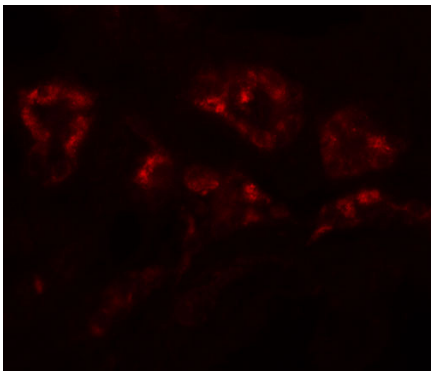
Images



Western blot analysis of DPAGT1 in mouse kidney tissue lysate with DPAGT1 antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide.

Immunohistochemistry of DPAGT1 in human kidney tissue with DPAGT1 antibody at 2.5 µg/mL.





Immunofluorescence of DPAGT1 in human kidney tissue with DPAGT1 antibody at 20 µg/mL.

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