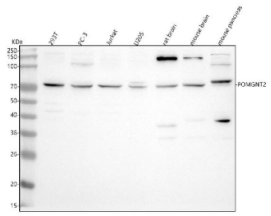
POMGNT2 Antibody / Protein O-linked mannose N-acetylglucosaminyltransferase 2 (FY12450)

Catalog No.	Formulation	Size
FY12450	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q8NAT1
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This POMGNT2 antibody is available for research use only.



Western blot analysis of POMGNT2 using anti-POMGNT2 antibody. Lane 1: human 293T whole cell lysates, Lane 2: human PC-3 whole cell lysates, Lane 3: human Jurkat whole cell lysates, Lane 4: human U2OS whole cell lysates, Lane 5: rat brain tissue lysates, Lane 6: mouse brain tissue lysates, Lane 7: mouse pancreas tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-POMGNT2 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. POMGNT2 (~67 kDa predicted) was detected primarily at ~75â€“90 kDa, consistent with N-linked glycosylation that slows migration on SDS-PAGE. Additional higher and lower bands in rodent tissues likely represent differentially glycosylated or partially processed enzyme forms.

Description

POMGNT2 antibody detects Protein O-linked mannose N-acetylglucosaminyltransferase 2, an enzyme involved in the biosynthesis of O-mannosyl glycans essential for proper glycoprotein maturation. POMGNT2 catalyzes the addition of N-acetylglucosamine to O-linked mannose on target proteins, an essential step in forming the core M1 glycan structure. This modification plays a pivotal role in the development and stability of the nervous system and skeletal muscle by ensuring correct glycosylation of proteins such as alpha-dystroglycan. The POMGNT2 antibody is an important research tool for studying congenital muscular dystrophies and glycosylation disorders affecting the central nervous system and skeletal tissues.

POMGNT2 is encoded by the POMGNT2 gene located on human chromosome 3q26.1. The protein is localized primarily in the Golgi apparatus, where it functions as a type II membrane-bound glycosyltransferase. Structurally, POMGNT2 contains a luminal catalytic domain responsible for UDP-GlcNAc transfer and a short cytoplasmic N-terminal tail that directs subcellular localization. This enzyme works sequentially with other glycosyltransferases, including POMT1, POMT2, and POMGNT1, to synthesize complex O-mannosyl glycans critical for basement membrane integrity and synaptic architecture.

The POMGNT2 antibody is frequently used in biochemical and histological studies examining glycosylation pathways disrupted in congenital muscular dystrophy-dystroglycanopathy type B14 (MDDGB14). Loss-of-function mutations in POMGNT2 result in hypoglycosylated alpha-dystroglycan, leading to reduced laminin binding and severe developmental abnormalities, including brain malformations and muscular dystrophy. Western blot analysis with this antibody typically identifies a band near 70Ã¯Â¿Â½75 kDa corresponding to the mature enzyme, while immunofluorescence demonstrates punctate perinuclear staining consistent with Golgi localization.

Research employing POMGNT2 knockout models has revealed its necessity for neuronal migration, synaptic organization, and muscle fiber stability. In addition to its structural roles, glycosylation defects mediated by POMGNT2 deficiency affect signal transduction and receptor clustering in developing tissues. NSJ Bioreagents provides a validated POMGNT2 antibody for applications such as western blotting, immunofluorescence, and immunohistochemistry, supporting detailed exploration of glycosyltransferase function in normal and disease contexts.

Application Notes

Optimal dilution of the POMGNT2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human POMGNT2 recombinant protein (Position: R40-K378) was used as the immunogen for the POMGNT2 antibody.

Storage

After reconstitution, the POMGNT2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.