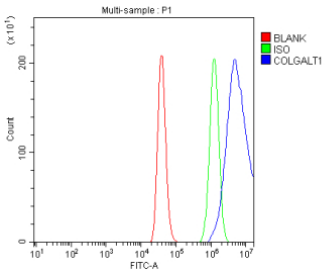
COLGALT1 Antibody / Collagen beta(1-O)galactosyltransferase 1 (FY12656)

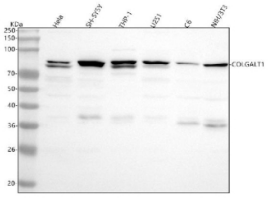
Catalog No.	Formulation	Size
FY12656	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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	Q8NBJ5
Applications	Western Blot: 0.25-0.5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This COLGALT1 antibody is available for research use only.



Flow Cytometry analysis of HEL cells using anti-COLGALT1 antibody. Overlay histogram showing HEL cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-COLGALT1 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample (Red line) was also used as a control.



Western blot analysis of GLT25D1/COLGALT1 using anti-COLGALT1 antibody. Lane 1: human Hela whole cell lysates, Lane 2: human SH-SY5Y whole cell lysates, Lane 3: human THP-1 whole cell lysates, Lane 4: human U251 whole cell lysates, Lane 5: rat C6 whole cell lysates, Lane 6: mouse NIH/3T3 whole cell 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-COLGALT1 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. Western blot analysis of COLGALT1 using anti-COLGALT1 antibody. A major doublet is observed at ~80-85 kDa in human samples, consistent with reported glycosylated forms of the protein, while mouse and rat lysates show a single band near the predicted 72 kDa corresponding to the less glycosylated ortholog.

Description

COLGALT1 antibody detects Collagen beta(1-O)galactosyltransferase 1, an enzyme that catalyzes the transfer of galactose to hydroxylysine residues in collagen. This post-translational modification is essential for proper collagen folding, stability, and secretion. COLGALT1 functions within the endoplasmic reticulum and Golgi apparatus and contributes to the biosynthesis of structurally mature collagen fibers. The COLGALT1 antibody is widely used in connective tissue, developmental, and fibrosis research to study collagen maturation, glycosylation, and extracellular matrix regulation.

COLGALT1 is encoded by the COLGALT1 gene located on human chromosome 19p13.2. The protein is approximately 739 amino acids long and is a member of the galactosyltransferase family. It forms a functional complex with its homolog COLGALT2 and works sequentially with lysyl hydroxylase (PLOD family) enzymes to glycosylate hydroxylysine residues in collagen alpha chains. This process stabilizes triple helix formation and enhances collagen secretion and cross-linking.

The COLGALT1 antibody detects an 85 kilodalton protein by western blot and shows perinuclear staining under immunofluorescence microscopy consistent with Golgi localization. COLGALT1 activity is required for the synthesis of type I, II, III, and IV collagens. Deficiency or mutation results in defective collagen glycosylation, leading to abnormal extracellular matrix assembly and diseases such as Ehlers-Danlos syndrome and osteogenesis imperfecta-like disorders.

COLGALT1 expression is tightly regulated during development and tissue repair. Increased expression promotes collagen deposition in fibrotic tissues, whereas reduced expression leads to unstable collagen and tissue fragility. It also contributes to tumor stroma remodeling by enhancing extracellular matrix density and rigidity, influencing cancer cell migration and angiogenesis.

As a key enzyme linking collagen biosynthesis and tissue integrity, COLGALT1 serves as a critical target for studying connective tissue disorders and fibrotic diseases. NSJ Bioreagents provides a validated COLGALT1 antibody optimized for its applications, supporting research into collagen glycosylation, fibrosis, and tissue regeneration.

Application Notes

Optimal dilution of the COLGALT1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human COLGALT1 recombinant protein (Position: A34-D454) was used as the immunogen for the COLGALT1 antibody.

Storage

After reconstitution, the COLGALT1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store

at -20oC. Avoid repeated freezing and thawing.

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