

GCNT2 Antibody / Beta-1,6-N-acetylglucosaminyltransferase 2 (FY13350)

Catalog No.	Formulation	Size
FY13350	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
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 Na ₂ HPO ₄ .
UniProt	Q8N0V5
Applications	Western Blot : 0.25-0.5ug/ml Immunohistochemistry : 2-5ug/ml Immunocytochemistry/Immunofluorescence : 5ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This GCNT2 antibody is available for research use only.

Description

GCNT2 antibody detects Beta-1,6-N-acetylglucosaminyltransferase 2, a Golgi-localized glycosyltransferase encoded by the GCNT2 gene on chromosome 6p24.3. GCNT2 is an enzyme that catalyzes the branching of poly-N-acetyllactosamine chains on glycoproteins and glycolipids, forming the I and i blood group antigens. It belongs to the glycosyltransferase 14 family and plays an essential role in the biosynthesis of complex glycans, particularly those expressed on erythrocytes, epithelial cells, and the ocular lens. GCNT2 expression is highest in red blood cells, corneal tissue, and gastrointestinal epithelium, where it contributes to cell adhesion and recognition processes.

GCNT2 functions by transferring N-acetylglucosamine residues via a beta1,6 linkage to galactose units, generating branched carbohydrate structures. These modifications affect protein stability, receptor signaling, and cell-cell interactions. The enzyme has three transcript isoforms (A, B, and C), each exhibiting tissue-specific expression patterns and promoter usage. GCNT2A is predominant in erythroid cells, while GCNT2B and GCNT2C are expressed in non-hematopoietic tissues such as the lens and gastrointestinal tract.

Structurally, GCNT2 contains a conserved catalytic domain typical of glycosyltransferases, including the DXH motif required for donor sugar binding. It is anchored in the Golgi membrane by a short N-terminal transmembrane domain, positioning its catalytic site within the lumen for glycan modification. GCNT2 belongs to the GT14 family of glycosyltransferases, which also includes GCNT1 and GCNT3, enzymes responsible for branching of mucin-type O-glycans and other carbohydrate chains.

Functionally, GCNT2 is responsible for converting linear i antigens into branched I antigens during erythrocyte maturation. Loss of GCNT2 activity results in the adult i blood group phenotype, characterized by persistence of fetal-type linear glycans. In the lens, GCNT2 participates in glycoprotein processing required for lens transparency, while in epithelial tissues, it regulates mucin glycosylation that influences cell adhesion and immune defense. Known substrates of GCNT2 include glycoproteins bearing poly-N-acetyllactosamine extensions such as laminin and selectins.

Mutations in GCNT2 are associated with congenital cataracts and the rare adult i blood group phenotype. Reduced enzymatic activity leads to accumulation of unbranched glycan structures, affecting membrane organization and cell surface recognition. In cancer, altered GCNT2 expression has been observed in breast, colon, and gastric carcinomas, where changes in glycan branching influence cell motility and metastasis. Pathway associations include glycosphingolipid biosynthesis, protein glycosylation, and immune recognition processes.

Immunohistochemical staining using GCNT2 antibody shows Golgi localization in epithelial and erythroid cells. The GCNT2 antibody from NSJ Bioreagents is an effective tool for investigating glycan biosynthesis, erythrocyte differentiation, and cancer-related changes in glycosylation patterns.

Application Notes

Optimal dilution of the GCNT2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human GCNT2 recombinant protein (Position: E27-Q397) was used as the immunogen for the GCNT2 antibody.

Storage

After reconstitution, the GCNT2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.