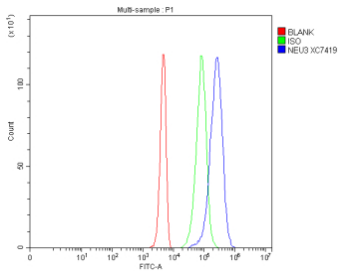
NEU3 Antibody / Sialidase 3 (FY12972)

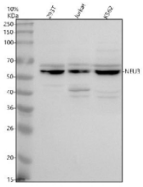
Catalog No.	Formulation	Size
FY12972	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human
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 Na2HPO4.
UniProt	Q9UQ49
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This NEU3 antibody is available for research use only.



Flow Cytometry analysis of 293T cells using anti-NEU3 antibody. Overlay histogram showing 293T cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-NEU3 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 without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Western blot analysis of NEU3 using anti-NEU3 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human 293T whole cell lysates, Lane 2: human Jurkat whole cell lysates, Lane 3: human K562 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-NEU3 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 an ECL Plus Western Blotting Substrate. A predominant doublet at ~55-65 kDa is detected, running above the ~48 kDa prediction and consistent with differential N-glycosylation of NEU3. Additional lower doublet species vary by sample and are consistent with partially glycosylated or proteolytically processed forms commonly observed for membrane-associated sialidases.

Description

NEU3 antibody detects Sialidase-3, a plasma membrane-associated enzyme that catalyzes the hydrolysis of sialic acid residues from gangliosides and glycoproteins. The UniProt recommended name is Sialidase-3 (NEU3). This enzyme is primarily localized at the plasma membrane and regulates signaling processes associated with cell growth, differentiation, and apoptosis through the modulation of membrane sialoglycoconjugates.

Functionally, NEU3 antibody identifies a 428-amino-acid enzyme that preferentially acts on gangliosides such as GM3, GD1a, and GT1b, catalyzing their desialylation. NEU3 activity alters the composition of lipid rafts, influencing membrane receptor function and downstream signaling. It modulates the activity of growth factor receptors, including EGFR and integrins, by affecting their sialic acid content and clustering at the plasma membrane. Through these mechanisms, NEU3 participates in the regulation of cell proliferation, adhesion, and migration.

The NEU3 gene is located on chromosome 11q13.5 and encodes a glycosidase that is anchored to the plasma membrane via hydrophobic domains. NEU3's enzymatic activity contributes to ganglioside catabolism and recycling, which are critical for maintaining lipid membrane homeostasis. Dysregulation of NEU3 expression has been linked to oncogenesis, as elevated levels promote tumor cell survival, motility, and resistance to apoptosis. Conversely, NEU3 deficiency impairs receptor-mediated signaling and disrupts ganglioside balance in neuronal and epithelial cells.

In cancer biology, NEU3 overexpression enhances epidermal growth factor receptor (EGFR) signaling by desialylating GM3, a natural EGFR inhibitor. This results in sustained receptor activation and downstream MAPK and PI3K/AKT pathway stimulation. NEU3 also influences integrin-mediated adhesion and migration, contributing to metastasis. Beyond oncology, NEU3 is involved in immune modulation, neuronal signaling, and muscle differentiation. It also regulates autophagy by modulating membrane glycosphingolipid composition.

NEU3 antibody is widely used in glycobiology, cancer research, and neurobiology to analyze sialidase function and membrane signaling. It supports applications including immunoblotting, immunocytochemistry, and enzyme localization studies. NEU3 expression profiling provides insight into tumor progression, inflammatory signaling, and metabolic disorders. The enzyme's surface localization makes it a potential therapeutic target for modulating receptor activity and glycosphingolipid metabolism.

Structurally, NEU3 contains conserved catalytic motifs typical of sialidases and a hydrophobic transmembrane anchor that facilitates membrane association. It functions as a monomer and is regulated by pH and substrate availability. NSJ Bioreagents provides NEU3 antibody reagents validated for use in membrane biology, oncology, and glycosylation research.

Application Notes

Optimal dilution of the NEU3 antibody should be determined by the researcher.

Immunogen

E.coli-derived human NEU3 recombinant protein (Position: H36-D414) was used as the immunogen for the NEU3 antibody.

Storage

After reconstitution, the NEU3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.