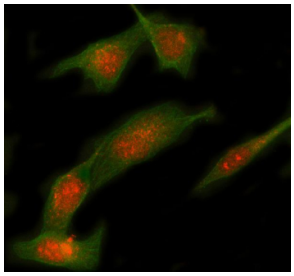
STX12 Antibody / Syntaxin 12 (FY12222)

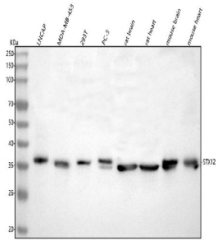
Catalog No.	Formulation	Size
FY12222	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

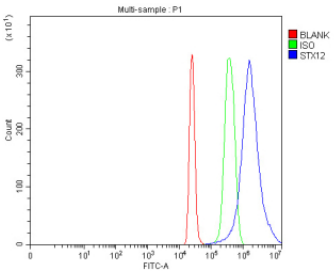
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q86Y82
Localization	Nucleoplasm, Golgi apparatus, Vesicles
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry : 5ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This STX12 antibody is available for research use only.



Immunofluorescent staining of STX12 using anti-STX12 antibody (red) and anti-Beta Tubulin antibody (green). STX12 was detected in immunocytochemical section of HELA cell. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-STX12 antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. Cy3 Conjugated Goat Anti-Rabbit IgG and FITC Conjugated Goat Anti-Mouse IgG were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of Syntaxin 12/STX12 using anti-STX12 antibody. Lane 1: human LNCAP whole cell lysates, Lane 2: human MDA-MB-453 whole cell lysates, Lane 3: human 293T whole cell lysates, Lane 4: human PC-3 whole cell lysates, Lane 5: rat brain tissue lysates, Lane 6: rat heart tissue lysates, Lane 7: mouse brain tissue lysates, Lane 8: mouse heart 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-STX12 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. The predicted band size for STX12 is at 32 kDa, commonly observed at 32-37 kDa.



Flow Cytometry analysis of 293T cells using anti-STX12 antibody. Overlay histogram showing 293T 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-STX12 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.

Description

STX12 antibody detects Syntaxin 12, encoded by the STX12 gene on chromosome 1p34.1. STX12 antibody is widely used in studies of intracellular trafficking, endosomal sorting, and vesicular transport. Syntaxin 12 belongs to the SNARE (soluble NSF attachment protein receptor) family of proteins, which mediate membrane fusion events in the endocytic and exocytic pathways. Specifically, Syntaxin 12 localizes to early and recycling endosomes, where it contributes to sorting and trafficking of receptors and other cargo between endosomes and the plasma membrane.

Structurally, Syntaxin 12 is a ~34 kDa protein with a typical SNARE domain that forms alpha-helical coiled-coils with other SNAREs. This domain interacts with SNAP and VAMP proteins to form ternary SNARE complexes required for vesicle fusion. A transmembrane helix anchors Syntaxin 12 to endosomal membranes, while its N-terminal regulatory domain mediates interactions with tethering factors and regulatory proteins.

Functionally, STX12 coordinates recycling of important receptors, including transferrin receptor, integrins, and immune receptors. By regulating receptor trafficking, it influences nutrient uptake, adhesion, migration, and signaling. STX12 also contributes to immune function by regulating recycling of MHC class II and T-cell receptors. Knockdown experiments demonstrate that loss of STX12 disrupts receptor recycling, leading to impaired signaling and defective cell migration. Researchers employ STX12 antibody to investigate membrane trafficking, endosome dynamics, and immune signaling pathways.

Clinically, Syntaxin 12 has been implicated in neurological disorders, immunity, and cancer. Altered trafficking through STX12-associated pathways may contribute to neurodegenerative disease, where endosomal dysfunction is a hallmark. Its role in immune receptor recycling suggests relevance in autoimmune disease and immunodeficiency. In cancer, STX12 expression correlates with migration and invasion potential of tumor cells, linking trafficking machinery to malignancy. NSJ Bioreagents offers STX12 antibody to support cell biology, immunology, and cancer research.

Experimentally, STX12 antibody is used in western blotting to detect the ~34 kDa protein, in immunofluorescence microscopy to visualize endosomal localization, and in immunohistochemistry to study tissue-specific expression. Co-immunoprecipitation with STX12 antibody helps identify interacting SNARE partners and regulators of endosomal sorting.

Application Notes

Optimal dilution of the STX12 antibody should be determined by the researcher.

Immunogen

E.coli-derived human Syntaxin 12/STX12 recombinant protein (Position: K103-K245) was used as the immunogen for the STX12 antibody.

Storage

After reconstitution, the STX12 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.