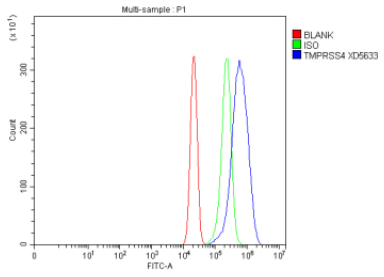
TMPRSS4 Antibody / Transmembrane protease serine 4 (FY12742)

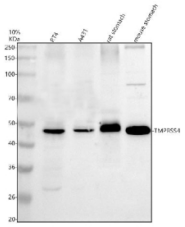
Catalog No.	Formulation	Size
FY12742	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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	Q9NRS4
Applications	Western Blot: 0.25-0.5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This TMPRSS4 antibody is available for research use only.



Flow Cytometry analysis of RT4 cells using anti-TMPRSS4 antibody. Overlay histogram showing RT4 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-TMPRSS4 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 TMPRSS4 using anti-TMPRSS4 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human RT4 whole cell lysates, Lane 2: human whole cell lysates, Lane 3: rat stomach tissue lysates, Lane 4: mouse stomach 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-TMPRSS4 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 specific band was detected for TMPRSS4 at approximately 48 kDa. The expected molecular weight of TMPRSS4 is ~48 kDa.

Description

TMPRSS4 antibody detects Transmembrane protease serine 4, a cell surface serine protease implicated in epithelial differentiation, tissue remodeling, and cancer progression. Encoded by the TMPRSS4 gene on chromosome 11q23.3, this enzyme belongs to the type II transmembrane serine protease family (TTSPs) characterized by an N-terminal transmembrane domain, a stem region, and a C-terminal trypsin-like serine protease domain. TMPRSS4 is synthesized as a zymogen that undergoes autocatalytic activation to generate the mature active enzyme at the plasma membrane.

TMPRSS4 is expressed in epithelial tissues of the gastrointestinal tract, lung, and kidney, as well as in certain tumors. It participates in the proteolytic activation of signaling molecules and extracellular matrix remodeling. Elevated TMPRSS4 expression has been linked to cancer invasion and metastasis through the activation of integrin and epithelial-mesenchymal transition pathways. TMPRSS4 promotes cell motility and survival by enhancing FAK and Src kinase signaling, modulating cytoskeletal organization, and upregulating matrix metalloproteinases.

The TMPRSS4 antibody is a critical reagent for cancer, developmental, and epithelial biology research. Western blot analysis typically identifies a 50-60 kilodalton band corresponding to the cleaved active form, while immunohistochemistry reveals membrane and cytoplasmic staining in epithelial cells and tumor tissues. The antibody allows detection of TMPRSS4 expression in normal and malignant tissues, aiding studies of protease-mediated signaling and tumor microenvironment remodeling.

Beyond oncology, TMPRSS4 may regulate viral entry for certain coronaviruses and influenza strains by cleaving viral envelope glycoproteins. Its involvement in epithelial homeostasis and infection response makes it an emerging therapeutic target. NSJ Bioreagents provides the TMPRSS4 antibody validated for its applications, ensuring robust and specific detection of this protease in diverse biological contexts.

Application Notes

Optimal dilution of the TMPRSS4 antibody should be determined by the researcher.

Immunogen

E.coli-derived human TMPRSS4 recombinant protein (Position: M1-K369) was used as the immunogen for the TMPRSS4 antibody.

Storage

After reconstitution, the TMPRSS4 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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