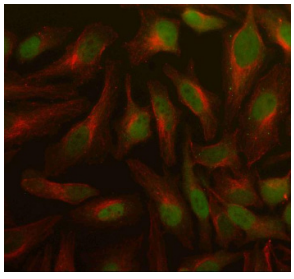
PSMD5 Antibody / 26S proteasome non-ATPase regulatory subunit 5 (FY13199)

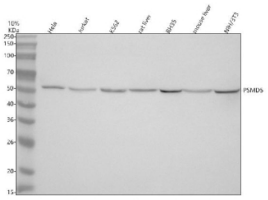
Catalog No.	Formulation	Size
FY13199	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

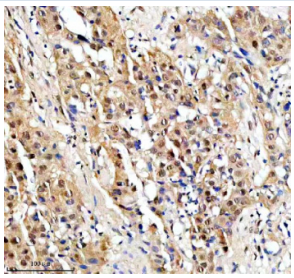
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q16401
Localization	Nuclear, cytoplasmic
Applications	Western Blot: 0.25-0.5ug/ml Immunohistochemistry: 2-5ug/ml Immunocytochemistry/Immunofluorescence: 5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This PSMD5 antibody is available for research use only.



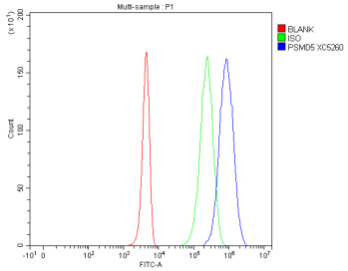
Immunofluorescent staining of PSMD5 using anti-PSMD5 antibody (green) and anti-Beta Tubulin antibody (red). PSMD5 was detected in an immunocytochemical section of Hela cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-PSMD5 antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG and Cy3 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 PSMD5 using anti-PSMD5 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human Hela whole cell lysates, Lane 2: human Jurkat whole cell lysates, Lane 3: human K562 whole cell lysates, Lane 4: rat liver tissue lysates, Lane 5: rat RH35 whole cell lysates, Lane 6: mouse liver tissue lysates, Lane 7: 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-PSMD5 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 PSMD5 at approximately 56 kDa. The expected molecular weight of PSMD5 is ~56 kDa.



Immunohistochemical staining of PSMD5 using anti-PSMD5 antibody. PSMD5 was detected in a paraffin-embedded section of human bladder cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-PSMD5 antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.



Flow Cytometry analysis of 293T cells using anti-PSMD5 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-PSMD5 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.

Description

PSMD5 antibody detects 26S proteasome non-ATPase regulatory subunit 5, a proteasome assembly modulator that regulates protein degradation and cellular proteostasis. The UniProt recommended name is 26S proteasome non-ATPase regulatory subunit 5 (PSMD5). Also known as Proteasome inhibitor PI31 homolog, this protein acts as a negative regulator of 26S proteasome formation and function.

Functionally, PSMD5 antibody identifies a 328-amino-acid cytoplasmic protein that binds proteasome regulatory subunits and interferes with their association into the mature 26S proteasome. PSMD5 fine-tunes proteasome activity by limiting the assembly of regulatory particles with the catalytic core, maintaining balance between protein degradation and stability. This regulation is crucial for cell cycle control, stress response, and antigen presentation.

The PSMD5 gene is located on chromosome 9q33.3 and is expressed in many tissues, including heart, brain, and skeletal muscle. PSMD5 expression is induced by stress and inflammatory signals to transiently reduce proteasome activity, preventing excessive protein turnover during cellular adaptation.

Pathologically, PSMD5 dysfunction affects protein quality control and contributes to neurodegenerative diseases, inflammation, and cancer. Overexpression inhibits proteasome activity, leading to accumulation of misfolded proteins, while deficiency may accelerate degradation of key signaling molecules. Research using PSMD5 antibody supports studies in proteostasis, protein degradation, and stress response pathways.

PSMD5 antibody is validated for western blotting, immunofluorescence, and immunoprecipitation to detect proteasome regulatory subunits. NSJ Bioreagents provides PSMD5 antibody reagents optimized for research in protein homeostasis, ubiquitin-proteasome system, and cellular stress regulation.

Structurally, 26S proteasome non-ATPase regulatory subunit 5 contains a conserved PI31 domain responsible for proteasome binding and inhibitory function. This domain interacts with the base subcomplex of the regulatory particle, competing with normal assembly factors. This antibody enables detailed study of PSMD5's role in proteasome regulation and protein degradation dynamics.

Application Notes

Optimal dilution of the PSMD5 antibody should be determined by the researcher.

Immunogen

E.coli-derived human PSMD5 recombinant protein (Position: M1-K493) was used as the immunogen for the PSMD5 antibody.

Storage

After reconstitution, the PSMD5 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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