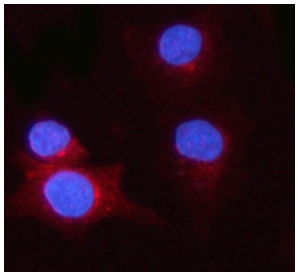
PSME1 Antibody / Immunoproteasome Activator Antibody (RQ8156)

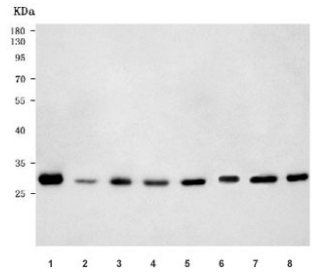
Catalog No.	Formulation	Size
RQ8156	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

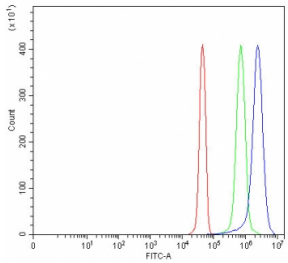
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q06323
Localization	Nuclear, cytoplasmic
Applications	Western blot: 0.5-1ug/ml Immunofluorescence: 5ug/ml Flow cytometry: 1-3ug/million cells Direct ELISA: 0.1-0.5ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Immunoprecipitation: 2ug per 500ug of lysate
Limitations	This PSME1 Antibody / Immunoproteasome Activator Antibody is available for research use only.



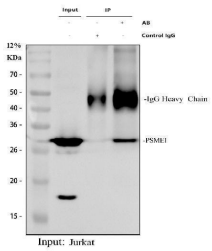
PSME1 Antibody A549 Cell IF. Immunofluorescent staining of FFPE human A549 cells with PSME1 antibody (red). Heat-induced epitope retrieval (HIER) was performed by steaming sections in pH 6 citrate buffer for 20 minutes prior to staining. Nuclei are counterstained with DAPI (blue). PSME1 immunoreactivity is observed predominantly within the cytoplasm with weaker nuclear staining, consistent with the expected localization of this immunoproteasome activator that promotes antigen processing, proteasome activity, and Major Histocompatibility Complex class I peptide presentation.



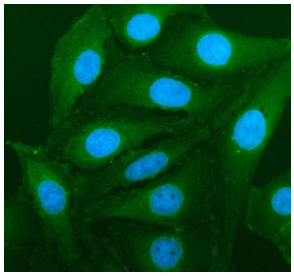
PSME1 Antibody Human, Rat and Mouse WB. Western blot testing of 1) human Raji, 2) human A431, 3) rat liver, 4) rat spleen, 5) rat RH35, 6) mouse liver, 7) mouse spleen, and 8) mouse RAW264.7 lysates with PSME1 antibody. A distinct immunoreactive band is detected at approximately 29 kDa in all samples, consistent with the predicted molecular weight of PSME1. The results demonstrate specific detection of this immunoproteasome activator, which promotes proteasome-mediated antigen processing and generation of peptides for Major Histocompatibility Complex class I presentation.



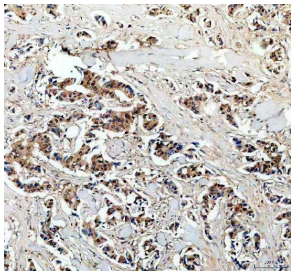
PSME1 Antibody U937 Cell Flow Cytometry. Flow cytometric analysis of fixed and permeabilized human U937 cells stained with PSME1 antibody at 1 ug per million cells following goat serum blocking. Red: cells alone. Green: isotype control. Blue: PSME1 antibody. The clear rightward shift of the PSME1 antibody histogram relative to the isotype control demonstrates specific intracellular detection of this immunoproteasome activator, which plays a central role in proteasome-mediated antigen processing and Major Histocompatibility Complex class I peptide presentation.



PSME1 Antibody Jurkat Cell IP-WB. Immunoprecipitation of PSME1 from human Jurkat whole cell lysate followed by western blot analysis using PSME1 antibody. Lane 1: Input Jurkat whole cell lysate (30 ug). Lane 2: Immunoprecipitation using rabbit control IgG (negative control). Lane 3: Immunoprecipitation with 2 ug PSME1 antibody from 500 ug Jurkat whole cell lysate. A specific immunoreactive band is detected at approximately 29 kDa, consistent with the predicted molecular weight of PSME1. The enrichment of PSME1 in the immunoprecipitated sample, with no corresponding band in the IgG control, demonstrates the suitability of this immunoproteasome activator antibody for immunoprecipitation and western blot applications.



PSME1 Antibody U2OS Cell IF. Immunofluorescent staining of U2OS cells with PSME1 antibody (green) at 5 ug/ml. Enzymatic antigen retrieval was performed for 15 minutes prior to staining. Nuclei are counterstained with DAPI (blue). PSME1 immunoreactivity is observed predominantly within the cytoplasm with weaker nuclear staining, consistent with the expected localization of this immunoproteasome activator that regulates proteasome activity, antigen processing, and Major Histocompatibility Complex class I peptide generation.



PSME1 Antibody Human Breast Cancer IHC. Immunohistochemical staining of FFPE human breast cancer tissue with PSME1 antibody at 2 ug/ml. Heat-induced epitope retrieval (HIER) was performed by boiling tissue sections in pH 8 EDTA buffer prior to staining. PSME1 immunoreactivity is observed predominantly within the cytoplasm and nuclei of malignant epithelial cells, consistent with the expected localization of this immunoproteasome activator that enhances proteasome-mediated antigen processing and Major Histocompatibility Complex class I peptide presentation. Cell nuclei are counterstained with hematoxylin (blue).

Description

PSME1 Antibody recognizes Proteasome Activator Subunit 1 (PSME1), also known as PA28 alpha or REGalpha, an essential component of the 11S proteasome activator complex. PSME1 associates with the ends of the 20S proteasome core to promote protein degradation independently of ubiquitin, increasing the generation of peptides for presentation by Major Histocompatibility Complex class I molecules. As a key regulator of immunoproteasome activity, PSME1 contributes to antigen processing, immune surveillance, and cellular responses to inflammatory stimuli. Consequently, PSME1 Antibody is widely used to investigate proteasome biology, antigen presentation, immunology, infection, and cancer.

PSME1 is broadly expressed but is strongly induced by interferon gamma and other pro-inflammatory cytokines. Together with PSME2 (PA28 beta), it forms the heteroheptameric PA28 activator complex, which enhances proteasomal cleavage of intracellular proteins into peptides that are efficiently presented to cytotoxic T lymphocytes. Beyond adaptive immunity, PSME1 participates in protein quality control, degradation of oxidatively damaged proteins, regulation of cellular stress responses, and maintenance of proteostasis. Because of these diverse functions, PSME1 plays an important role in preserving cellular homeostasis during inflammation and oxidative stress.

Altered PSME1 expression has been associated with viral infection, autoimmune disease, chronic inflammation, neurodegenerative disorders, and numerous cancers, including melanoma, colorectal cancer, breast cancer, lung cancer, and hepatocellular carcinoma. Increased immunoproteasome activity influences immune cell activation, tumor immune recognition, and responses to immunotherapy, making PSME1 an increasingly important biomarker and therapeutic target. Ongoing studies continue to define its contributions to antigen presentation, immune escape, and inflammatory signaling pathways.

NSJ Bioreagents offers highly validated PSME1 Antibody products for reliable detection of endogenous PSME1 in human and animal tissues. These antibodies support investigations into immunoproteasome activation, antigen processing, immune regulation, proteostasis, and cancer biology while providing dependable performance across western blotting, immunohistochemistry, immunofluorescence, flow cytometry, and other research applications.

Learn more about proteins involved in antigen processing, immune regulation and immunoproteasome function on our Immunology Antibodies page.

Application Notes

Optimal dilution of the PSME1 Antibody / Immunoproteasome Activator Antibody should be determined by the researcher.

Immunogen

E. coli-derived recombinant human protein (amino acids M1-Y249) was used as the immunogen for the PSME1 antibody.

Storage

After reconstitution, the PSME1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

PA28 alpha antibody, Proteasome Activator Subunit 1 antibody, REGalpha antibody, PSME1 antibody, Proteasome Activator Alpha antibody, 11S Regulator Alpha antibody

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