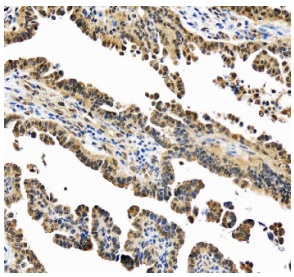
PSMC1 Antibody / 26S Proteasome regulatory subunit 4 (RQ8941)

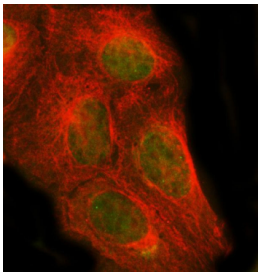
Catalog No.	Formulation	Size
RQ8941	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

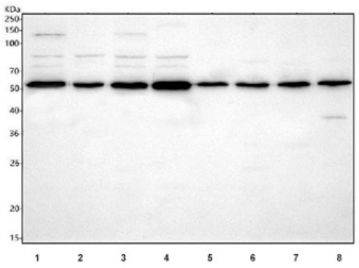
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Purified
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen Affinity purified
UniProt	P62191
Localization	Cytoplasmic, Nuclear
Applications	Western Blot : 1-2ug/ml Immunohistochemistry (FFPE) : 2-5ug/ml ELISA : 0.1-0.5ug/ml Flow Cytometry : 1-3ug/million cells Immunofluorescence : 5ug/ml
Limitations	This PSMC1 antibody is available for research use only.



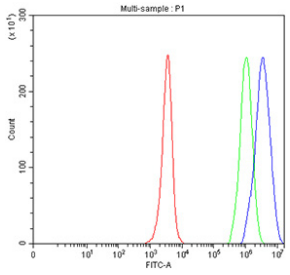
IHC staining of FFPE human ovarian cancer tissue with PSMC1 antibody, HRP-secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Immunofluorescent staining of FFPE human U-2 OS cells with PSMC1 antibody (green) and Beta Tubulin mAb (red). HIER: steam section in pH6 citrate buffer for 20 min.



Western blot testing of 1) human A549, 2) human Jurkat, 3) human HeLa 4) human MCF7, 5) rat brain, 6) rat lung, 7) mouse brain and 8) mouse lung tissue lysate with PSMC1 antibody. Predicted molecular weight ~49 kDa.



Flow cytometry testing of fixed and permeabilized human JK cells with PSMC1 antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= PSMC1 antibody.

Description

PSMC1 antibody is an important research tool for studying protein degradation, signaling, and cellular homeostasis. The encoded protein, 26S proteasome regulatory subunit 4, is a member of the AAA ATPase family and serves as a key component of the 19S regulatory particle that associates with the 20S core to form the 26S proteasome. This large multi-subunit protease complex is central to ubiquitin-dependent protein degradation, ensuring timely turnover of regulatory proteins and removal of damaged or misfolded proteins.

PSMC1, also known as Rpt2, is one of six ATPases that form a heterohexameric ring in the base of the 19S regulatory particle. Through ATP hydrolysis, PSMC1 contributes to unfolding ubiquitinated substrates and translocating them into the 20S catalytic chamber for degradation. This activity is essential for controlling protein quality, regulating the cell cycle, modulating transcription factor activity, and coordinating stress responses. By ensuring efficient substrate processing, PSMC1 plays a fundamental role in preserving cellular function under both normal and stress conditions.

The proteasome system, which depends on subunits such as PSMC1, regulates diverse pathways including antigen processing for MHC class I presentation. This immune-related function is critical for defense against pathogens and recognition of abnormal cells. In addition, proteasome-mediated degradation influences signaling cascades involving NF-kB, p53, and cyclins, linking PSMC1 directly to processes such as apoptosis, proliferation, and DNA repair.

Altered proteasome activity has been associated with cancer, neurodegenerative disorders, and autoimmune disease. Changes in expression or activity of PSMC1 may disrupt protein turnover, contributing to accumulation of toxic protein aggregates or dysregulated signaling. As proteasome inhibitors have already proven valuable in cancer therapy, individual components like PSMC1 are of increasing interest for their roles in disease biology and therapeutic targeting.

The PSMC1 antibody is widely applied in western blotting, immunohistochemistry, immunofluorescence, and flow cytometry to study protein expression, localization, and regulation. These applications allow researchers to investigate proteasome function in health and disease, assess subunit composition, and explore the effects of genetic or pharmacologic manipulation. For investigators examining protein quality control, immune surveillance, or therapeutic mechanisms, the PSMC1 antibody offers a reliable detection tool. NSJ Bioreagents provides validated antibodies that deliver reproducible and high-quality results for advanced scientific research.

Application Notes

Optimal dilution of the PSMC1 antibody should be determined by the researcher.

Immunogen

Amino acids K21-L440 from the human protein were used as the immunogen for the PSMC1 antibody.

Storage

After reconstitution, the PSMC1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.