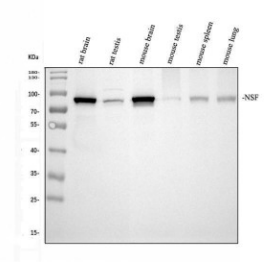
NSF Antibody / Vesicle-Fusing ATPase Antibody (RQ4040)

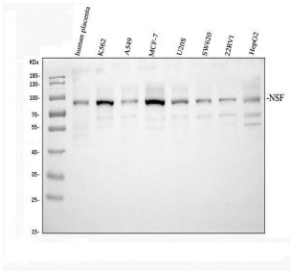
Catalog No.	Formulation	Size
RQ4040	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

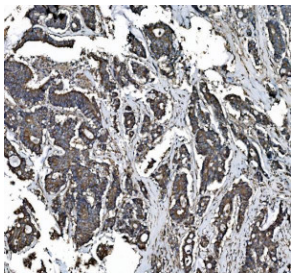
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P46459
Localization	Cytoplasmic
Applications	Western Blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Immunofluorescence: 5ug/ml Direct ELISA: 0.1-0.5ug/ml
Limitations	This NSF Antibody / Vesicle-Fusing ATPase Antibody is available for research use only.



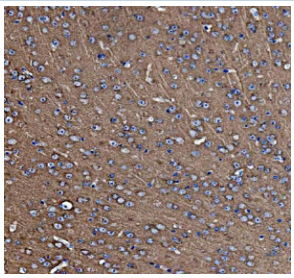
NSF Antibody Rat Brain and Mouse Tissue WB. Western blot analysis of NSF Antibody / Vesicle-Fusing ATPase Antibody detected a specific band at approximately 83 kDa, consistent with the expected molecular weight of NSF. Lanes: (1) rat brain, (2) rat testis, (3) mouse brain, (4) mouse testis, (5) mouse spleen, and (6) mouse lung lysates. Strong immunoreactive bands are observed across rat and mouse tissues, demonstrating cross-species recognition of endogenous NSF, with highest expression evident in brain tissue, consistent with the essential role of NSF in synaptic vesicle recycling and intracellular membrane trafficking. This NSF Antibody supports western blot studies of vesicle-fusing ATPase expression, SNARE complex recycling, membrane fusion, and neurobiology.



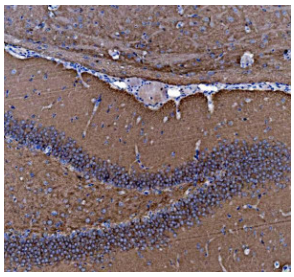
NSF Antibody Human Tissue and Cancer Cell WB. Western blot analysis of NSF Antibody / Vesicle-Fusing ATPase Antibody detected a prominent band at approximately 83 kDa, consistent with the expected molecular weight of NSF. Lanes: (1) human placenta, (2) human K562, (3) human A549, (4) human MCF-7, (5) human U2OS, (6) human SW620, (7) human 22Rv1, and (8) human HepG2 lysates. Robust NSF expression is detected across all human tissue and cancer cell samples, consistent with the ubiquitous requirement for NSF in ATP-dependent SNARE complex disassembly and intracellular membrane trafficking. This NSF Antibody supports western blot studies of vesicle-fusing ATPase expression, SNARE complex recycling, membrane fusion, and intracellular transport.



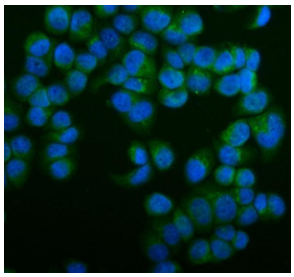
NSF Antibody Human Colon Cancer IHC. FFPE human colon cancer tissue was stained with NSF Antibody / Vesicle-Fusing ATPase Antibody following heat-induced epitope retrieval in pH8 EDTA buffer. The image demonstrates strong predominantly cytoplasmic staining throughout malignant epithelial cells with minimal background in the surrounding stromal tissue, consistent with the ubiquitous role of NSF in ATP-dependent membrane trafficking and SNARE complex recycling. This NSF Antibody supports immunohistochemical studies of vesicle-fusing ATPase expression, intracellular transport, membrane fusion, and cancer biology.



NSF Antibody Mouse Brain IHC. FFPE mouse brain tissue was stained with NSF Antibody / Vesicle-Fusing ATPase Antibody following heat-induced epitope retrieval in pH8 EDTA buffer. The image demonstrates widespread moderate to strong cytoplasmic staining throughout neuronal cell bodies and neuropil with minimal background, consistent with the abundant expression of NSF in the central nervous system where it supports ATP-dependent SNARE complex recycling and synaptic vesicle trafficking. This NSF Antibody supports immunohistochemical studies of vesicle-fusing ATPase expression, intracellular membrane trafficking, synaptic vesicle recycling, and neurobiology.



NSF Antibody Rat Brain IHC. FFPE rat brain tissue was stained with NSF Antibody / Vesicle-Fusing ATPase Antibody following heat-induced epitope retrieval in pH8 EDTA buffer. The image demonstrates widespread moderate to strong cytoplasmic staining throughout the brain, including prominent immunoreactivity in neuronal cell layers and surrounding neuropil, with minimal background staining. This distribution is consistent with the high abundance of NSF in neurons, where it functions in ATP-dependent SNARE complex recycling and synaptic vesicle trafficking. This NSF Antibody supports immunohistochemical studies of vesicle-fusing ATPase expression, intracellular membrane trafficking, synaptic vesicle recycling, and neurobiology.



NSF Antibody T47D Cell IF. Immunofluorescent staining of T47D cells was performed with NSF Antibody / Vesicle-Fusing ATPase Antibody following enzyme-mediated antigen retrieval and DAPI nuclear counterstaining. The image demonstrates diffuse cytoplasmic staining with relatively little nuclear signal, consistent with the intracellular localization of NSF in membrane trafficking pathways. This NSF Antibody supports immunofluorescence studies of vesicle-fusing ATPase expression, SNARE complex recycling, intracellular membrane trafficking, and vesicle fusion.

Description

NSF Antibody / Vesicle-Fusing ATPase Antibody is designed for the study of a highly conserved ATPase that is essential for intracellular membrane trafficking and vesicle fusion. N-Ethylmaleimide Sensitive Factor (NSF) is a member of the ATPases Associated with diverse cellular Activities (AAA ATPase) family and functions as a molecular chaperone that

catalyzes the ATP-dependent disassembly of SNARE protein complexes after membrane fusion. This recycling step is critical for maintaining continuous vesicle transport between intracellular compartments and for supporting repeated rounds of membrane fusion throughout the cell.

NSF acts together with soluble NSF attachment proteins (SNAPs) to recognize cis-SNARE complexes formed after vesicle fusion. Hydrolysis of ATP provides the energy required to dissociate these complexes, allowing SNARE proteins to participate in subsequent rounds of vesicle docking and fusion. Through this mechanism, NSF regulates constitutive and regulated exocytosis, endocytosis, neurotransmitter release, Golgi trafficking, endosomal transport, lysosomal function, and membrane recycling. Because SNARE-mediated membrane fusion is fundamental to nearly every eukaryotic cell, NSF is indispensable for normal cellular organization and communication.

Altered NSF activity has been associated with neurological disorders, impaired synaptic transmission, neurodegeneration, and defects in vesicular transport. NSF also participates in membrane trafficking events that influence receptor recycling, autophagy, cytokine secretion, and intracellular pathogen biology. Its central position within membrane trafficking pathways has made NSF an important model protein for studies of vesicle dynamics, organelle biogenesis, protein secretion, and neuronal function. Continued investigation of NSF is expanding understanding of how ATP-driven remodeling of SNARE complexes regulates membrane organization and cellular homeostasis.

An NSF Antibody is a valuable reagent for detecting endogenous NSF by western blotting, immunohistochemistry, immunofluorescence, immunoprecipitation, flow cytometry, and related laboratory applications. A Vesicle-Fusing ATPase Antibody supports investigations of membrane trafficking, vesicle fusion, SNARE complex recycling, intracellular transport, and neurobiology.

Researchers investigating synaptic vesicle cycling, membrane trafficking, neurotransmitter release, and intracellular transport may also be interested in exploring our Neuroscience Marker Antibodies page for additional validated research antibodies.

Application Notes

Optimal dilution of the NSF Antibody / Vesicle-Fusing ATPase Antibody should be determined by the researcher.

Immunogen

A recombinant human partial protein corresponding to amino acids N620-D744 was used as the immunogen for the NSF antibody.

Storage

After reconstitution, the NSF 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

NSF antibody, N-Ethylmaleimide Sensitive Factor antibody, Vesicle-Fusing ATPase antibody, NEM-Sensitive Fusion Protein antibody

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