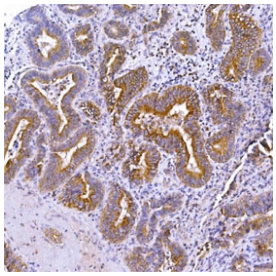
Optineurin Antibody / OPTN Antibody (R31756)

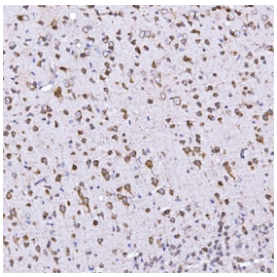
Catalog No.	Formulation	Size
R31756	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

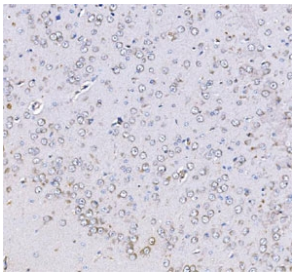
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q96CV9
Gene ID	10133
Localization	Cytoplasmic
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This Optineurin Antibody / OPTN Antibody is available for research use only.



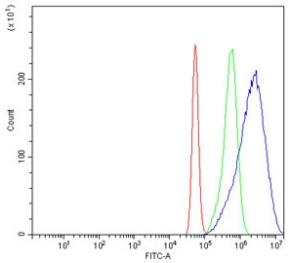
Optineurin Antibody IHC Analysis of Human Gallbladder Adenosquamous Carcinoma. Immunohistochemical analysis of formalin-fixed, paraffin-embedded human gallbladder adenosquamous carcinoma tissue using OPTN Antibody. Brown DAB staining is observed predominantly in the cytoplasm of malignant epithelial cells, including cells lining glandular structures. Heat-induced epitope retrieval was performed using EDTA buffer (pH 8.0) for 20 minutes.



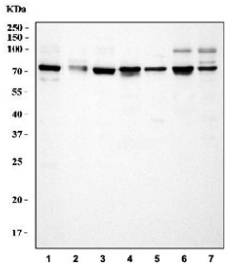
Optineurin Antibody IHC Analysis of Mouse Brain Tissue. Immunohistochemical analysis of formalin-fixed, paraffin-embedded mouse brain tissue using OPTN Antibody. Brown DAB staining is observed in scattered cells throughout the tissue, with predominantly cytoplasmic immunoreactivity. Heat-induced epitope retrieval was performed using EDTA buffer (pH 8.0) for 20 minutes.



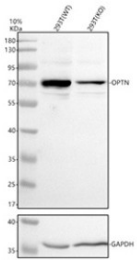
Optineurin Antibody IHC Analysis of Rat Brain Tissue. Immunohistochemical analysis of formalin-fixed, paraffin-embedded rat brain tissue using OPTN Antibody. Brown DAB staining is observed in scattered cells within the brain tissue, predominantly in the cytoplasm. Heat-induced epitope retrieval was performed using EDTA buffer (pH 8.0) for 20 minutes.



Optineurin Antibody FACS Staining of Human A431 Cells. Flow cytometry analysis of human A431 cells using OPTN Antibody at 1 ug per million cells following blocking with goat serum. The antibody-stained population (blue) shows a rightward fluorescence shift relative to the isotype control (green) and cells-only control (red), indicating increased optineurin-associated staining.



Optineurin Antibody WB Analysis of Human HeLa, HT-1080 and HepG2 Cells, Rat Heart and Brain, and Mouse Heart and Brain. Western blot analysis of human HeLa (lane 1), HT-1080 (lane 2), and HepG2 (lane 3) cell lysates, rat heart (lane 4) and brain (lane 5) tissue lysates, and mouse heart (lane 6) and brain (lane 7) tissue lysates using OPTN Antibody. Prominent immunoreactive bands are detected at approximately 70-75 kDa, consistent with the commonly observed migration of optineurin despite its calculated molecular weight of approximately 66 kDa. Expected molecular weight: 66-74 kDa depending on phosphorylation level.



Optineurin Antibody WB Analysis of Human 293T WT and OPTN KO Cells. Western blot analysis of wild-type (WT) 293T cell lysate (lane 1) and OPTN knockout (KO) 293T cell lysate (lane 2) using OPTN Antibody. A prominent immunoreactive band near 70 kDa in WT cells is markedly reduced in OPTN KO cells, supporting antibody specificity. Although the calculated molecular weight of optineurin is approximately 66 kDa, migration near 70-75 kDa is commonly observed. Samples containing 30 ug of protein per lane were separated by 10% SDS-PAGE, and the primary antibody was used at 0.5 ug/ml.

Description

Optineurin Antibody / OPTN Antibody targets optineurin, a multifunctional cytoplasmic protein encoded by the OPTN gene. Optineurin participates in selective autophagy, intracellular membrane trafficking, inflammatory signaling, and cellular stress responses. Originally identified through interactions with proteins involved in vesicular transport and signaling, optineurin is now recognized as an important regulator of mitochondrial quality control and the clearance of damaged cellular components.

Optineurin contains several functional regions, including coiled-coil domains, a ubiquitin-binding region, and a C-terminal

zinc finger. These structural features enable interactions with ubiquitinated proteins, membrane-associated complexes, and components of the autophagy machinery. Optineurin also contains an LC3-interacting region that facilitates recruitment of autophagosomal membranes to selected cellular cargo.

One of the best-characterized functions of optineurin is its participation in mitophagy, the selective removal of damaged mitochondria. Following mitochondrial damage, the PINK1-Parkin pathway promotes ubiquitination of proteins on the outer mitochondrial membrane. Optineurin recognizes ubiquitinated mitochondrial components and helps recruit autophagy-related machinery. Phosphorylation by TANK-binding kinase 1 (TBK1) enhances important interactions involved in cargo recognition and autophagosome formation.

Optineurin also contributes to intracellular trafficking through interactions with proteins such as RAB8, myosin VI, and components associated with the Golgi apparatus. These interactions connect optineurin to vesicle transport, membrane organization, and cellular homeostasis. Its localization and binding partners can change in response to cellular stress and alterations in signaling activity.

In inflammatory signaling, optineurin has been investigated as a regulator of pathways involving NF-kappaB and TBK1. Its effects depend on the signaling context and the molecular complexes with which it interacts. Through these activities, optineurin contributes to the coordination of innate immune responses, cellular survival, and the removal of damaged intracellular material.

Pathogenic variants in OPTN have been associated with amyotrophic lateral sclerosis (ALS) and certain forms of glaucoma, including normal-tension glaucoma. Disease-associated alterations can disrupt autophagy, protein interactions, or other regulatory functions. These findings have established optineurin as an important protein in research into neurodegeneration, mitochondrial dysfunction, and cellular stress.

The relationship between optineurin, ubiquitin signaling, and selective autophagy continues to be investigated in neurological disease and other pathological conditions. Optineurin Antibody is relevant to studies of mitochondrial quality control, vesicular trafficking, inflammatory regulation, and the mechanisms connecting defective protein clearance with cellular dysfunction.

Application Notes

The stated application concentrations are suggested starting amounts. Titration of the Optineurin Antibody / OPTN Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

Human partial recombinant protein (AA 241-577) was used as the immunogen for this Optineurin antibody.

Storage

After reconstitution, the Optineurin 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

OPTN antibody, Optineurin protein antibody, Huntingtin-interacting protein L antibody, NEMO-related protein antibody, Adenovirus E3-14.7K-interacting protein antibody, FIP2 antibody

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