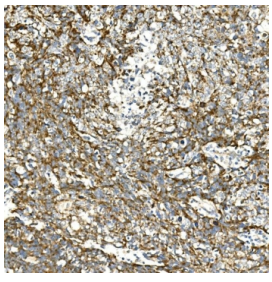
VPS4A Antibody / Vacuolar protein sorting-associated protein 4A (RQ6019)

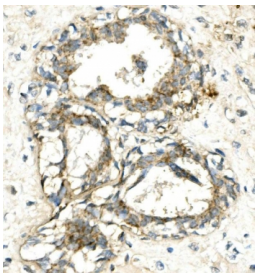
Catalog No.	Formulation	Size
RQ6019	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

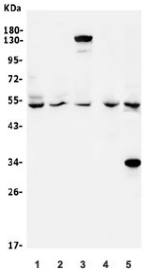
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose and 0.025% sodium azide
UniProt	Q9UN37
Localization	Cytoplasmic
Applications	Western Blot : 0.5-1ug/ml Immunohistochemistry : 1-2ug/ml Flow Cytometry : 1-3ug/million cells Direct ELISA : 0.1-0.5ug/ml
Limitations	This VPS4A antibody is available for research use only.



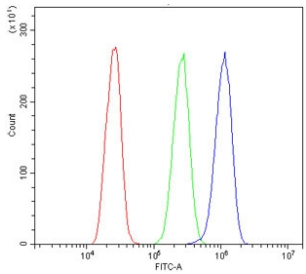
IHC staining of FFPE human lung cancer with VPS4A antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



IHC staining of FFPE human breast cancer with VPS4A antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Western blot testing of human 1) K562, 2) Raji, 3) HEK293, 4) rat brain and 5) mouse testis lysate with VPS4A antibody. Predicted molecular weight ~49 kDa.



Flow cytometry testing of fixed and permeabilized human A431 cells with VPS4A antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= VPS4A antibody.

Description

VPS4A Antibody targets Vacuolar protein sorting-associated protein 4A, an ATPase encoded by the VPS4A gene that plays a central role in endosomal trafficking and membrane remodeling. VPS4A is a key component of the endosomal sorting complexes required for transport (ESCRT) machinery, which regulates the formation and disassembly of membrane-bound vesicular structures. Through its ATP-dependent activity, VPS4A contributes to proper cargo sorting, membrane scission events, and recycling of ESCRT components within the cell.

Functionally, Vacuolar protein sorting-associated protein 4A acts as a AAA ATPase that catalyzes the disassembly of ESCRT-III polymers following membrane scission. This disassembly step is essential for resetting the ESCRT machinery so it can be reused in subsequent trafficking events. VPS4A activity is therefore required for efficient multivesicular body formation, endosomal cargo delivery to lysosomes, and maintenance of endosomal system integrity. A VPS4A Antibody enables investigation of ESCRT-dependent membrane trafficking pathways and ATPase-driven regulation of vesicle dynamics in research studies.

VPS4A expression is observed broadly across tissues and cell types, consistent with its involvement in fundamental intracellular trafficking processes. At the subcellular level, VPS4A is predominantly localized to the cytoplasm but is dynamically recruited to endosomal membranes during active ESCRT-mediated events. This regulated localization reflects its role as a transient effector that engages with membrane-associated complexes in response to trafficking demands. Changes in VPS4A distribution may indicate altered endosomal activity or membrane remodeling states.

At the molecular level, VPS4A contains conserved ATP-binding and hydrolysis motifs characteristic of AAA ATPases, along with regions that mediate interaction with ESCRT-III components and regulatory cofactors. These structural features enable VPS4A to couple ATP hydrolysis to mechanical force, driving conformational changes required for complex disassembly. Regulation of VPS4A activity involves protein-protein interactions and nucleotide binding states that ensure precise temporal control of ESCRT function.

From a biological and disease relevance perspective, ESCRT pathway components such as VPS4A are involved in a wide range of cellular processes beyond endosomal sorting, including cytokinetic abscission, plasma membrane repair, and viral budding. Disruption of ESCRT regulation can lead to defects in membrane integrity and trafficking, contributing to disease-associated cellular dysfunction. As a result, VPS4A is of interest in studies of cell division, membrane repair mechanisms, and host-pathogen interactions that exploit ESCRT machinery.

VPS4A Antibody reagents are valuable tools for studying endosomal trafficking, ESCRT pathway regulation, and ATPase-driven membrane remodeling. These antibodies support research into intracellular transport, vesicle dynamics, and disease-associated alterations in membrane trafficking systems. NSJ Bioreagents provides VPS4A Antibody products intended for research use.

Application Notes

Optimal dilution of the VPS4A antibody should be determined by the researcher.

Immunogen

Recombinant human protein (amino acids M1-K71) was used as the immunogen for the VPS4A antibody.

Storage

After reconstitution, the VPS4A antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.