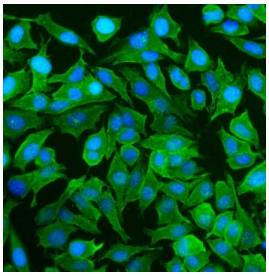
NEAS Antibody / Neural Cytoskeleton Marker (RQ6726)

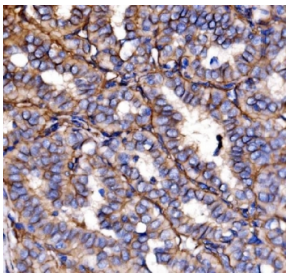
Catalog No.	Formulation	Size
RQ6726	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

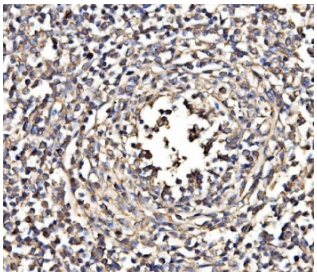
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q13813
RRID	AB_3754899
Localization	Cytoplasmic
Applications	Western blot: 1-2ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Immunofluorescence (FFPE): 5ug/ml Flow cytometry: 1-3ug/million cells Direct ELISA: 0.1-0.5ug/ml
Limitations	This NEAS Antibody / Neural Cytoskeleton Marker is available for research use only.



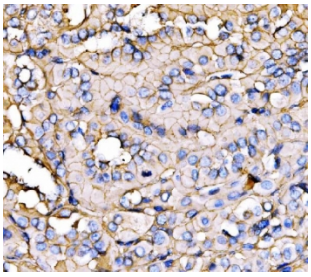
NEAS Antibody Human HeLa Cervical Cancer Cell IF. Immunofluorescence of FFPE human HeLa cervical cancer cells using NEAS Antibody shows cytoplasmic green fluorescence consistent with SPTAN1 localization along the submembranous cytoskeleton and cellular extensions. Nuclei were counterstained with DAPI (blue). Heat-induced epitope retrieval was performed by steaming in pH 6 citrate buffer for 20 min prior to staining. This NEAS Antibody demonstrates detection of the spectrin-based cytoskeleton in human cells.



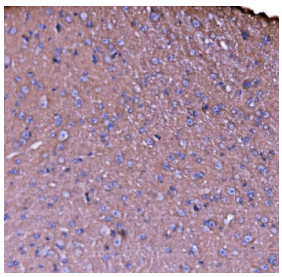
NEAS Antibody Human Hashimoto's Thyroiditis IHC. Immunohistochemistry of FFPE human Hashimoto's thyroiditis tissue using NEAS Antibody shows prominent HRP-DAB brown staining outlining thyroid follicular epithelial cells, consistent with the submembranous localization of SPTAN1/NEAS. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling prior to staining. This NEAS Antibody demonstrates detection of the spectrin-based cytoskeleton in human thyroid tissue.



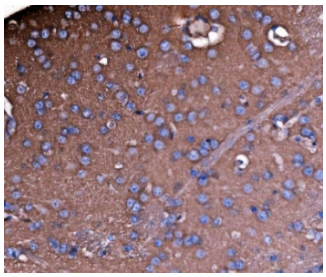
NEAS Antibody Human Testis Large B Cell Tumor IHC. Immunohistochemistry of FFPE human testis large B cell tumor tissue using NEAS Antibody shows HRP-DAB brown staining within tumor cells, consistent with cytoplasmic and submembranous localization of SPTAN1/NEAS. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling prior to staining. This NEAS Antibody demonstrates detection of the spectrin-based cytoskeleton in human tumor tissue.



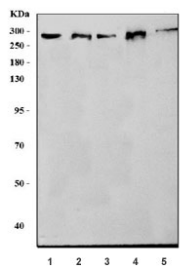
NEAS Antibody Human Thyroid Papillary Carcinoma IHC. Immunohistochemistry of FFPE human thyroid papillary carcinoma tissue using NEAS Antibody shows HRP-DAB brown staining outlining tumor epithelial cells, consistent with the submembranous localization of SPTAN1/NEAS. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling prior to staining. This NEAS Antibody demonstrates detection of the spectrin-based cytoskeleton in human thyroid papillary carcinoma tissue.



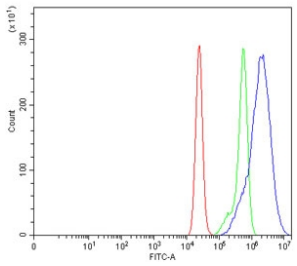
NEAS Antibody Mouse Brain IHC. Immunohistochemistry of FFPE mouse brain tissue using NEAS Antibody / Neural Cytoskeleton Marker shows diffuse HRP-DAB brown staining throughout the neuropil with staining of neuronal cell bodies, consistent with the broad distribution of SPTAN1/NEAS in the neural cytoskeleton. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling prior to staining. This NEAS Antibody demonstrates detection of the neural cytoskeleton marker in mouse brain tissue.



NEAS Antibody Rat Brain IHC. Immunohistochemistry of FFPE rat brain tissue using NEAS Antibody / Neural Cytoskeleton Marker shows diffuse HRP-DAB brown staining throughout the neuropil with staining of neuronal cell bodies, consistent with the broad distribution of SPTAN1/NEAS in the neural cytoskeleton. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling prior to staining. This NEAS Antibody demonstrates detection of the neural cytoskeleton marker in rat brain tissue.



NEAS Antibody Mouse and Rat Lung and Brain WB. Western blot analysis using NEAS Antibody / Neural Cytoskeleton Marker was performed on 1) rat lung, 2) rat brain, 3) mouse lung, 4) mouse brain and 5) mouse NIH 3T3 cell lysates. The antibody detects a prominent band near the predicted molecular weight of approximately 284 kDa. Detection across brain and non-neural samples is consistent with the broad tissue distribution of SPTAN1/NEAS. This NEAS Antibody supports detection of the neural cytoskeleton marker in mouse and rat samples.



NEAS Antibody Human Caco-2 Colorectal Cancer Cell FACS. Flow cytometry of human Caco-2 colorectal cancer cells using NEAS Antibody at 1 ug/million cells following blocking with goat sera. The histogram shows cells alone (red), isotype control (green) and NEAS Antibody staining (blue). The rightward shift of the antibody-stained population relative to the isotype control demonstrates detection of SPTAN1/NEAS in Caco-2 cells. This NEAS Antibody supports detection of the spectrin-based cytoskeleton in human cells.

Description

NEAS Antibody / Neural Cytoskeleton Marker recognizes non-erythrocytic alpha spectrin, a large cytoskeletal scaffolding protein encoded by the SPTAN1 gene. NEAS is also widely known as alpha II spectrin and alpha fodrin and is a major component of the spectrin-based cytoskeleton in non-erythroid cells. The protein associates with beta spectrins and actin to form a flexible structural network beneath the plasma membrane, contributing to cell shape, mechanical stability and the organization of membrane-associated proteins.

NEAS is broadly expressed and is not restricted to neuronal cells. Spectrin complexes provide structural support in many tissues by linking the plasma membrane to the actin cytoskeleton and serving as scaffolds for ion channels, receptors, adhesion molecules and signaling proteins. Through these interactions, SPTAN1 contributes to membrane organization, cellular architecture and the maintenance of specialized membrane domains in both neural and non-neural tissues.

The functions of NEAS are particularly important in the nervous system, where spectrin-based cytoskeletal networks help maintain neuronal morphology, axonal stability and membrane organization. SPTAN1 participates in the structural organization of axons and other specialized neuronal compartments, and pathogenic variants in SPTAN1 have been associated with neurodevelopmental and neurological disorders, including developmental and epileptic encephalopathies. These roles make NEAS relevant to research into neural cytoskeleton organization, neuronal structure and mechanisms underlying neurological disease.

NEAS is also an important substrate for proteolytic enzymes activated during cellular injury and apoptosis. Calpain- and caspase-mediated cleavage of alpha spectrin can generate characteristic breakdown products that are studied in connection with neuronal injury, neurodegeneration, apoptosis and cytoskeletal damage. Detection of the intact protein and its processed forms can therefore provide insight into both spectrin cytoskeletal organization and cellular responses to injury or stress.

This rabbit polyclonal NEAS Antibody has been validated in mouse and rat brain samples by immunohistochemistry and western blot, supporting its use for investigating SPTAN1 in neural tissues. Validation in human non-neural tissue further reflects the broad tissue distribution of this non-erythrocytic spectrin protein. A NEAS Antibody can support research into neural cytoskeleton organization, spectrin function, neuronal structure, membrane stability and injury-associated spectrin proteolysis.

Alpha fodrin is encoded by SPTAN1 and forms a major component of the non-erythroid spectrin cytoskeleton; additional reagents targeting this protein are available on the SPTAN1 Antibody page.

Application Notes

Optimal dilution of the NEAS Antibody / Neural Cytoskeleton Marker should be determined by the researcher.

Immunogen

Recombinant human protein (amino acids E1916-S2472) was used as the immunogen for the NEAS antibody.

Storage

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

Copyright © NSJ Bioreagents. All rights reserved.