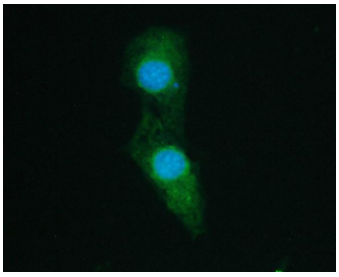
PTPN11 Antibody / SHP2 / Tyrosine-protein phosphatase non-receptor type 11 [clone 2E6] (RQ4920)

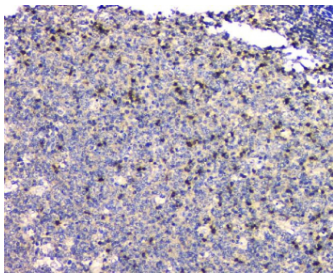
Catalog No.	Formulation	Size
RQ4920	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

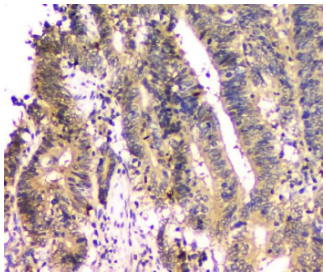
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2b
Clone Name	2E6
Purity	Purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose and 0.025% sodium azide
UniProt	Q06124
Localization	Cytoplasmic, Nuclear
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Immunofluorescence: 5ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This PTPN11 antibody is available for research use only.



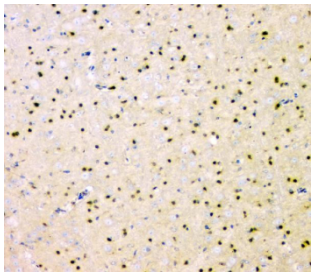
Immunofluorescent staining of FFPE human U-251 cells with PTPN11 antibody (green) and DAPI nuclear stain (blue). HIER: steam section in pH6 citrate buffer for 20 min.



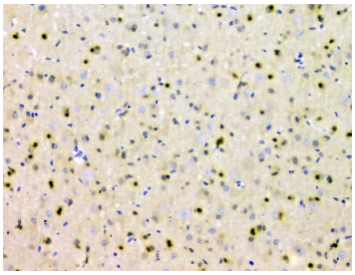
IHC staining of FFPE human tonsil tissue with PTPN11 antibody, HRP-secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



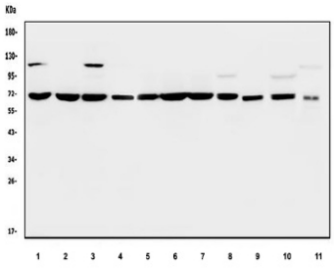
IHC staining of FFPE human colon cancer tissue with PTPN11 antibody, HRP-secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



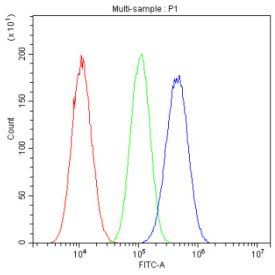
IHC staining of FFPE mouse brain tissue with PTPN11 antibody, HRP-secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



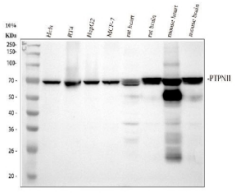
IHC staining of FFPE rat brain tissue with PTPN11 antibody, HRP-secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Western blot testing of 1) human HepG2, 2) human Jurkat, 3) human CCRF-CEM, 4) human K562, 5) human A549, 6) human Caco-2, 7) human HeLa, 8) rat brain, 9) rat C6, 10) mouse brain and 11) mouse Neuro-2a cell lysate with PTPN11 antibody. Predicted molecular weight ~68 kDa.



Flow cytometry testing of fixed and permeabilized human A549 cells with PTPN11 antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= PTPN11 antibody.



Western blot analysis of SHP2 (PTPN11) expression in human, rat, and mouse samples. Whole cell lysates and tissue lysates were separated by SDS-PAGE under reducing conditions and probed with anti-SHP2/PTPN11 antibody. Lane 1: human HeLa whole cell lysates; Lane 2: human RT4 whole cell lysates; Lane 3: human HepG2 whole cell lysates; Lane 4: human MCF-7 whole cell lysates; Lane 5: rat heart tissue lysates; Lane 6: rat brain tissue lysates; Lane 7: mouse heart tissue lysates; Lane 8: mouse brain tissue lysates. A prominent band is detected at approximately 68 kDa, consistent with the predicted molecular weight of SHP2 based on its amino acid sequence. Stronger signal is observed in brain tissue lysates compared to heart tissue lysates, consistent with expected stronger expression of SHP2 in neural tissues.

Description

PTPN11 Antibody targets Tyrosine-protein phosphatase non-receptor type 11, also known as SHP2, a cytoplasmic protein tyrosine phosphatase encoded by the PTPN11 gene that plays a central role in intracellular signal transduction. SHP2 is a widely expressed signaling regulator that participates in multiple growth factor, cytokine, and hormone signaling pathways. Through its phosphatase activity and adaptor functions, SHP2 integrates extracellular cues with downstream cellular responses that control proliferation, differentiation, migration, and survival.

Functionally, Tyrosine-protein phosphatase non-receptor type 11 contains two N-terminal SH2 domains that mediate binding to phosphorylated tyrosine residues on activated receptors and adaptor proteins. This interaction relieves autoinhibition of the phosphatase domain, enabling SHP2 to dephosphorylate specific substrates and propagate signaling cascades. SHP2 is a well-established positive regulator of the MAPK signaling pathway and contributes to sustained ERK activation following receptor stimulation. A PTPN11 Antibody enables investigation of phosphatase-dependent signaling mechanisms and SHP2-mediated pathway regulation in research settings.

PTPN11 expression is observed across many tissues and cell types, reflecting its involvement in fundamental signaling processes. At the subcellular level, SHP2 is primarily localized to the cytoplasm but is dynamically recruited to activated receptor complexes at the plasma membrane. This regulated localization allows SHP2 to function as a signal-responsive modulator that links receptor activation to intracellular signaling networks. Changes in SHP2 expression or distribution may reflect altered signaling states or cellular responses to external stimuli.

At the molecular level, SHP2 consists of tandem SH2 domains, a central protein tyrosine phosphatase domain, and a C-terminal tail containing regulatory phosphorylation sites. These structural features enable precise control of enzymatic activity and protein-protein interactions. Post-translational modifications, including phosphorylation, further regulate SHP2 activity and interactions, contributing to fine-tuning of signaling outputs across different cellular contexts.

From a biological and disease relevance perspective, PTPN11 has been extensively studied in developmental biology and disease research. Germline and somatic alterations in PTPN11 are associated with dysregulated signaling and have been implicated in developmental syndromes and cancers. Aberrant SHP2 activity can lead to sustained pathway activation and altered cellular behavior, highlighting its importance as a regulator of signal fidelity and cellular homeostasis.

PTPN11 Antibody reagents are valuable tools for studying protein tyrosine phosphatase signaling, receptor-mediated pathway regulation, and intracellular signal integration. These antibodies support research into growth factor signaling, oncogenic pathway activation, and mechanisms governing cellular responsiveness to external cues. NSJ Bioreagents provides PTPN11 Antibody products intended for research use.

Application Notes

Optimal dilution of the PTPN11 antibody should be determined by the researcher.

Immunogen

Amino acids EKFATLAELVQYYMEHHGQLKEKNGDVIELK from the human protein were used as the immunogen for the PTPN11 antibody.

Storage

After reconstitution, the PTPN11 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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