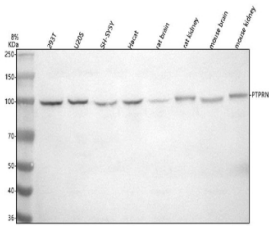
PTPRN Antibody / Receptor-type tyrosine-protein phosphatase-like N (FY12365)

Catalog No.	Formulation	Size
FY12365	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q16849
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This PTPRN antibody is available for research use only.



Western blot analysis of PTPRN using anti-PTPRN antibody. Electrophoresis was performed on a 8% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human 293T whole cell lysates, Lane 2: human U20S whole cell lysates, Lane 3: human SH-SY5Y whole cell lysates, Lane 4: human Hacat whole cell lysates, Lane 5: rat brain tissue lysates, Lane 6: rat kidney tissue lysates, Lane 7: mouse brain tissue lysates, Lane 8: mouse kidney tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-PTPRN antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. The expected molecular weight of PTPRN is 96-106 kDa (three isoforms).

Description

The PTPRN antibody targets Receptor-type tyrosine-protein phosphatase-like N, a membrane-associated protein encoded by the PTPRN gene. This protein is primarily expressed in neuroendocrine tissues, including pancreatic islets

and the brain, where it plays critical roles in vesicle trafficking, hormone secretion, and cell signaling. Receptor-type tyrosine-protein phosphatase-like N is a member of the protein tyrosine phosphatase (PTP) family, but unlike classical PTPs, it lacks catalytic activity due to substitutions within its phosphatase domain. The PTPRN antibody provides researchers with a reliable reagent to study this important secretory granule-associated protein and its involvement in neuroendocrine regulation.

Receptor-type tyrosine-protein phosphatase-like N, also known as islet antigen 2 (IA-2) and Islet cell antigen 512 (ICA 512), localizes to dense-core secretory vesicles in pancreatic beta cells and neurons. It participates in the exocytosis of insulin, neurotransmitters, and other hormones by regulating vesicle priming and trafficking. The PTPRN antibody enables visualization of IA-2 distribution within endocrine tissues, supporting studies of insulin granule dynamics and secretory mechanisms. Given its expression pattern, PTPRN has become a key marker for endocrine differentiation and synaptic function.

Autoantibodies against PTPRN are major biomarkers of type 1 diabetes mellitus, detected in pre-symptomatic and newly diagnosed patients. These autoantibodies target epitopes on the cytoplasmic domain of the protein, reflecting autoimmune destruction of pancreatic beta cells. The PTPRN antibody supports research aimed at understanding autoantigen formation and immune recognition mechanisms in diabetes. Its detection of Receptor-type tyrosine-protein phosphatase-like N allows exploration of expression changes in pancreatic tissue and model systems that mimic beta-cell stress or immune attack.

In the nervous system, PTPRN modulates synaptic vesicle turnover and neurotransmitter release. It interacts with SNARE proteins and other exocytic machinery components to regulate calcium-dependent secretion. The PTPRN antibody is an essential reagent for characterizing these interactions and mapping protein distribution in brain regions involved in neurotransmission and neuroendocrine signaling. Alterations in IA-2 expression have also been associated with neurodegenerative and psychiatric conditions, suggesting broader roles in neural physiology.

Applications for the PTPRN antibody include western blotting, immunofluorescence, and immunohistochemistry. These techniques reveal its enrichment in pancreatic islets, pituitary cells, and neuronal terminals. NSJ Bioreagents provides this antibody with validated specificity and consistency, ensuring reliable detection across multiple species. By supporting studies of insulin secretion, autoimmunity, and synaptic vesicle biology, the PTPRN antibody advances understanding of endocrine and neural regulation. Its versatility makes it a critical tool for molecular endocrinology, neurobiology, and autoimmune research.

Application Notes

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

Immunogen

E.coli-derived human IA-2/PTPRN recombinant protein (Position: V35-H569) was used as the immunogen for the PTPRN antibody.

Storage

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