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PTPN6 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2811C

Product Information

Application	WB, IHC-P, IF, E
Primary Accession	P29350
Reactivity	Rat, Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB17225
Calculated MW	67561
Antigen Region	247-277

Additional Information

Gene ID	5777
Other Names	Tyrosine-protein phosphatase non-receptor type 6, Hematopoietic cell protein-tyrosine phosphatase, Protein-tyrosine phosphatase 1C, PTP-1C, Protein-tyrosine phosphatase SHP-1, SH-PTP1, PTPN6, HCP, PTP1C
Target/Specificity	This PTPN6 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 247-277 amino acids from the Central region of human PTPN6.
Dilution	WB~~1:1000 IHC-P~~1:100~500 IF~~1:100 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	PTPN6 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PTPN6
Synonyms	HCP, PTP1C

Function	Tyrosine phosphatase enzyme that plays important roles in controlling immune signaling pathways and fundamental physiological processes such as hematopoiesis (PubMed:14739280, PubMed:29925997). Dephosphorylates and negatively regulate several receptor tyrosine kinases (RTKs) such as EGFR, PDGFR and FGFR, thereby modulating their signaling activities (PubMed:21258366, PubMed:9733788). When recruited to immunoreceptor tyrosine-based inhibitory motif (ITIM)-containing receptors such as immunoglobulin-like transcript 2/LILRB1, programmed cell death protein 1/PDCD1, CD3D, CD22, CLEC12A and other receptors involved in immune regulation, initiates their dephosphorylation and subsequently inhibits downstream signaling events (PubMed:11907092, PubMed:14739280, PubMed:37932456, PubMed:38166031). Modulates the signaling of several cytokine receptors including IL-4 receptor (PubMed:9065461). Additionally, targets multiple cytoplasmic signaling molecules including STING1, LCK or STAT1 among others involved in diverse cellular processes including modulation of T-cell activation or cGAS-STING signaling (PubMed:34811497, PubMed:38532423). Within the nucleus, negatively regulates the activity of some transcription factors such as NFAT5 via direct dephosphorylation. Also acts as a key transcriptional regulator of hepatic gluconeogenesis by controlling recruitment of RNA polymerase II to the PCK1 promoter together with STAT5A (PubMed:37595871).
Cellular Location	Cytoplasm. Nucleus Note=In neurons, translocates into the nucleus after treatment with angiotensin II (By similarity). Shuttles between the cytoplasm and nucleus via its association with PDPK1.
Tissue Location	Isoform 1 is expressed in hematopoietic cells. Isoform 2 is expressed in non-hematopoietic cells

Background

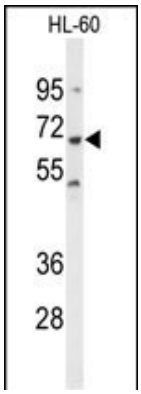
PTPN6 is a member of the protein tyrosine phosphatase (PTP) family. PTPs are known to be signaling molecules that regulate a variety of cellular processes including cell growth, differentiation, mitotic cycle, and oncogenic transformation. N-terminal part of this PTP contains two tandem Src homolog (SH2) domains, which act as protein phospho-tyrosine binding domains, and mediate the interaction of this PTP with its substrates. This PTP is expressed primarily in hematopoietic cells, and functions as an important regulator of multiple signaling pathways in hematopoietic cells. This PTP has been shown to interact with, and dephosphorylate a wide spectrum of phospho-proteins involved in hematopoietic cell signaling.

References

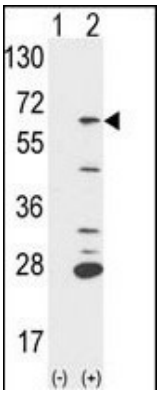
Korporaal,S.J., Arterioscler. Thromb. Vasc. Biol. 29 (3), 372-379 (2009)
Cho,Y.S., Am. J. Respir. Cell Mol. Biol. 39 (4), 412-419 (2008)
Christophi,G.P., Lab. Invest. 88 (3), 243-255 (2008)
Jones,M.L., J. Biol. Chem. 279 (39), 40475-40483 (2004)

Images

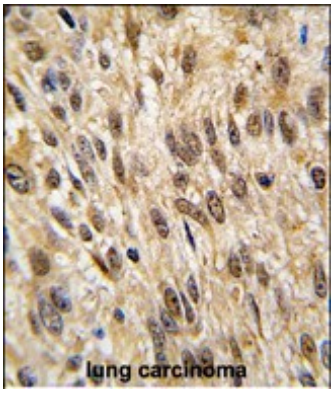
Immunofluorescent analysis of U251 cells, using PTPN6 Antibody (Center) (Cat. #AP2811c). AP2811c was diluted at 1:100 dilution. Alexa Fluor 488-conjugated goat anti-rabbit lgG at 1:400 dilution was used as the secondary antibody (green). DAPI was used to stain the cell nuclear (blue).



Western blot analysis of PTPN6 Antibody (Center) (Cat.#AP2811c) in HL-60 cell line lysates (35ug/lane).PTPN6 (arrow) was detected using the purified Pab.



Western blot analysis of PTPN6 (arrow) using rabbit polyclonal PTPN6 Antibody (Center) (Cat. #AP2811c). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the PTPN6 gene (Lane 2) (Origene Technologies).(2ug/ml)



Formalin-fixed and paraffin-embedded human lung carcinoma tissue reacted with PTPN6 antibody (Center), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.