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PTPIA2 beta Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8427a

Product Information

Application	WB, E
Primary Accession	Q92932
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB0597
Calculated MW	111271
Antigen Region	94-125

Additional Information

Gene ID	5799
Other Names	Receptor-type tyrosine-protein phosphatase N2, R-PTP-N2, Islet cell autoantigen-related protein, IAR, ICAAR, Phogrin, PTPRN2, KIAA0387
Target/Specificity	This PTPIA2 beta antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 94-125 amino acids from the N-terminal region of human PTPIA2 beta.
Dilution	WB~~1:1000 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	PTPIA2 beta Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PTPRN2
Synonyms	KIAA0387
Function	Plays a role in vesicle-mediated secretory processes. Required for normal accumulation of secretory vesicles in hippocampus, pituitary and pancreatic

	islets. Required for the accumulation of normal levels of insulin-containing vesicles and preventing their degradation. Plays a role in insulin secretion in response to glucose stimuli. Required for normal accumulation of the neurotransmitters norepinephrine, dopamine and serotonin in the brain. In females, but not in males, required for normal accumulation and secretion of pituitary hormones, such as luteinizing hormone (LH) and follicle- stimulating hormone (FSH) (By similarity). Required to maintain normal levels of renin expression and renin release (By similarity). May regulate catalytic active protein-tyrosine phosphatases such as PTPRA through dimerization (By similarity). Has phosphatidylinositol phosphatase activity; the PIPase activity is involved in its ability to regulate insulin secretion. Can dephosphorylate phosphatidylinositol 4,5-biphosphate (PI(4,5)P2), phosphatidylinositol 5-phosphate and phosphatidylinositol 3-phosphate (By similarity). Regulates PI(4,5)P2 level in the plasma membrane and localization of cofilin at the plasma membrane and thus is indirectly involved in regulation of actin dynamics related to cell migration and metastasis; upon hydrolysis of PI(4,5)P2 cofilin is released from the plasma membrane and acts in the cytoplasm in severing F-actin filaments (PubMed:26620550).
Cellular Location	Cytoplasmic vesicle, secretory vesicle membrane {ECO:0000250|UniProtKB:P80560}; Single-pass type I membrane protein {ECO:0000250|UniProtKB:P80560}. Cytoplasmic vesicle, secretory vesicle, synaptic vesicle membrane {ECO:0000250|UniProtKB:P80560}; Single-pass type I membrane protein {ECO:0000250|UniProtKB:P80560} Note=Predominantly found on dense-core secretory granules. Sorting to secretory granules in part is dependent of the N-terminal propeptide domain of the precursor and its interaction with CPE (By similarity) Transiently found at the cell membrane, when secretory vesicles fuse with the cell membrane to release their cargo. Is then endocytosed and recycled to secretory vesicles involving clathrin-dependent AP2- mediated endocytosis. Recycled via STX6- but not TTTGN1/TGN38- containing compartments (By similarity). {ECO:0000250|UniProtKB:P80560, ECO:0000250|UniProtKB:Q63475}
Tissue Location	Highest levels in brain and pancreas (PubMed:8798755, PubMed:8954911). Lower levels in trachea, prostate, stomach and spinal cord (PubMed:8798755).

Background

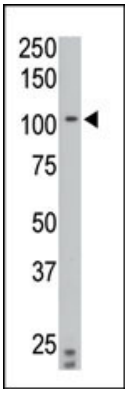
PTPIA2beta is a member of the protein tyrosine phosphatase (PTP) family. PTPs are known to be signaling molecules that regulate a variety of cellular processes including cell growth, differentiation, mitotic cycle, and oncogenic transformation. This PTP possesses an extracellular region, a single transmembrane region, and a single intracellular catalytic domain, and thus represents a receptor-type PTP. The catalytic domain of this PTP is most closely related to PTPRN/IA-2beta. This PTP and PTPRN are both found to be major autoantigens associated with insulin-dependent diabetes mellitus.

References

Schmidli, R.S., et al., Autoimmunity 28(1):15-23 (1998).
Li, Q., et al., Proc. Assoc. Am. Physicians 109(4):429-439 (1997).
Cui, L., et al., J. Biol. Chem. 271(40):24817-24823 (1996).
Kawasaki, E., et al., Biochem. Biophys. Res. Commun. 227(2):440-447 (1996).
Smith, P.D., et al., Biochem. Biophys. Res. Commun. 229(2):402-411 (1996).

Images

The anti-PTPIA2 beta N-term Pab (Cat. #AP8427a) is used



in Western blot to detect PTPIA2 beta in C6 cell lysate.