10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

PIM1 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7932a

Product Information

Application	IHC-P, WB, E
Primary Accession	P11309
Other Accession	Q9N0P9
Reactivity	Human, Rat, Mouse
Predicted	Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	35686
Antigen Region	374-404

Additional Information

Gene ID	5292
Other Names	Serine/threonine-protein kinase pim-1, PIM1
Target/Specificity	This PIM1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 374-404 amino acids from the C-terminal region of human PIM1.
Dilution	IHC-P~~1:100~500 WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, 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	PIM1 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PIM1
Function	Proto-oncogene with serine/threonine kinase activity involved in cell survival and cell proliferation and thus providing a selective advantage in tumorigenesis (PubMed:15528381, PubMed:1825810, PubMed:31548394). Exerts its oncogenic activity through: the regulation of MYC transcriptional

	activity, the regulation of cell cycle progression and by phosphorylation and inhibition of proapoptotic proteins (BAD, MAP3K5, FOXO3) (PubMed:18593906). Phosphorylation of MYC leads to an increase of MYC protein stability and thereby an increase of transcriptional activity (By similarity). The stabilization of MYC exerted by PIM1 might explain partly the strong synergism between these two oncogenes in tumorigenesis (By similarity). Mediates survival signaling through phosphorylation of BAD, which induces release of the anti-apoptotic protein Bcl-X(L)/BCL2L1 (By similarity). Phosphorylation of MAP3K5, another proapoptotic protein, by PIM1, significantly decreases MAP3K5 kinase activity and inhibits MAP3K5-mediated phosphorylation of JNK and JNK/p38MAPK subsequently reducing caspase-3 activation and cell apoptosis (PubMed:19749799). Stimulates cell cycle progression at the G1-S and G2-M transitions by phosphorylation of CDC25A and CDC25C (PubMed:16356754). Phosphorylation of CDKN1A, a regulator of cell cycle progression at G1, results in the relocation of CDKN1A to the cytoplasm and enhanced CDKN1A protein stability (PubMed:12431783). Promotes cell cycle progression and tumorigenesis by down-regulating expression of a regulator of cell cycle progression, CDKN1B, at both transcriptional and post-translational levels (PubMed:18593906). Phosphorylation of CDKN1B, induces 14-3-3 proteins binding, nuclear export and proteasome-dependent degradation (PubMed:18593906). May affect the structure or silencing of chromatin by phosphorylating HP1 gamma/CBX3 (PubMed:10664448). Also acts as a regulator of homing and migration of bone marrow cells involving functional interaction with the CXCL12-CXCR4 signaling axis (By similarity). Acts as a positive regulator of mTORC1 signaling by mediating phosphorylation and inhibition of DEPDC5 component of the GATOR1 complex (PubMed:31548394). Acts as a negative regulator of innate immunity by mediating phosphorylation and inactivation of GBP1 in absence of infection: phosphorylation of GBP1 induces interaction with 14-3-3 protein sigma (SFN) and retention in the cytosol (PubMed:37797010). Also phosphorylates and activates the ATP-binding cassette transporter ABCG2, allowing resistance to drugs through their excretion from cells (PubMed:18056989). Promotes brown adipocyte differentiation (By similarity).
Cellular Location	[Isoform 1]: Cytoplasm. Nucleus.
Tissue Location	Expressed primarily in cells of the hematopoietic and germline lineages. Isoform 1 and isoform 2 are both expressed in prostate cancer cell lines.

Background

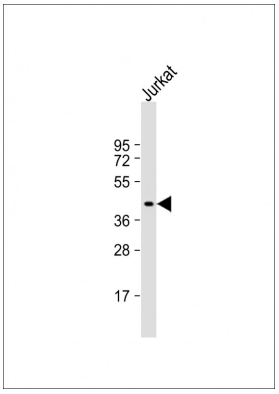
PIM1, which belongs to the Serine/Threonine protein kinase family, is thought to play a role in signal transduction in blood cells. The protooncogene PIM1 encodes a protein kinase upregulated in prostate cancer. It may affect the structure or silencing of chromatin by phosphorylating HP1 gamma/CBX3. PIM1 is expressed primarily in cells of the hematopoietic and germ line lineages.

References

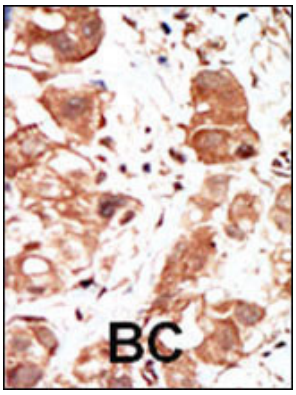
Strausberg, R.L., et al., Proc. Natl. Acad. Sci. U.S.A. 99(26):16899-16903 (2002). Pasqualucci, L., et al., Nature 412(6844):341-346 (2001). Koike, N., et al., FEBS Lett. 467(1):17-21 (2000). Reeves, R., et al., Gene 90(2):303-307 (1990). Telerman, A., et al., Mol. Cell. Biol. 8(4):1498-1503 (1988).

Images

Anti-PIM1 Antibody (E298) at 1:1000 dilution + Jurkat whole cell lysate Lysates/proteins at 20 µg per lane.



Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 45 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, 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. BC = breast carcinoma; HC = hepatocarcinoma.

Citations

- High Expression of NEK2 and PIM1, but Not PIM3, Is Linked to an Aggressive Phenotype of Bronchopulmonary Neuroendocrine Neoplasms
- Prognostic impact of protein overexpression of the proto-oncogene PIM-1 in gastric cancer.
- Hypoxia-mediated up-regulation of Pim-1 contributes to solid tumor formation.
- Comprehensive identification of proteins in Hodgkin lymphoma-derived Reed-Sternberg cells by LC-MS/MS.
- Hypoxia-inducible proto-oncogene Pim-1 is a prognostic marker in pancreatic ductal adenocarcinoma.
- Molecular markers predicting lymph node metastasis in early esophageal cancer.
- Patterns and Significance of PIM Kinases in Urothelial Carcinoma.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.