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[Marker Primary Antibody]

Rabbit Anti-PIM1+PIM3/FITC Conjugated antibody

Catalog Number: SL10305R-FITC

FOR RESEARCH USE ONLY

[DATASHEET]

Host:	Rabbit
Isotype:	IgG
Clonality:	Polyclonal
Target:	Anti-PIM1+PIM3/FITC
Immunogen:	KLH conjugated synthetic peptide derived from human PIM1+PIM3
Purification:	affinity purified by Protein A
Concentration:	1mg/ml
Storage:	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. The lyophilized antibody is stable at room temperature for at least one month and for greater than a year when kept at -20°C. When reconstituted in sterile pH 7.4 1M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.
Applications:	IF=1:100-500 Flow-Cyt=1ug/test not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Reactivity:	Mouse,Rat(predicted:Human,Chicken,Dog,Pig,Cow,Rabbit,Sheep,GuineaPig)
Subcellular Location:	The cell membrane
Background:	background: PIM1 is a member of the serine/threonine kinase PIM oncogene family. PIM1 has been implicated in lymphomagenesis, cell proliferation, apoptosis, differentiation and tumourigenesis. The PIM1 protein kinase is upregulated in prostate cancer. The Pim family serine/threonine protein kinases were first identified in studies examining genes targeted for proviral insertion in murine leukemia virus-induced T lymphomas. Increased levels of Pim kinases predispose cells to lymphomagenesis and enhance the activity of mitogenic proteins such as p100, c-Myb, and Cdc25A. In addition, Pim kinases are also involved in modulation of synaptic strength in neurons and anti-apoptotic signaling in hematopoietic progenitor cells. Pim-3, a member of the proto-oncogene Pim family that expresses serine/threonine kinase activity, shares significant homology with Pim-1

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	serine/threonine protein kinases. Pim-3 may function as a mediator of synaptic plasticity in the brain and is presumably involved in the anti-apoptosis process and cell cycle progression as well as the proliferation of human hepatoma cell lines. The Pim-3 protein is widely expressed, however no expression is observed in the colon, thymus, or small intestine. **Function:** Proto-oncogene with serine/threonine kinase activity involved in cell survival and cell proliferation and thus providing a selective advantage in tumorigenesis. 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). Phosphorylation of MYC leads to an increase of MYC protein stability and thereby an increase of transcriptional activity. The stabilization of MYC exerced by PIM1 might explain partly the strong synergism between these two oncogenes in tumorigenesis. Mediates survival signaling through phosphorylation of BAD, which induces release of the anti-apoptotic protein Bcl-X(L)/BCL2L1. Phosphorylation of MAP3K5, an other 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. Stimulates cell cycle progression at the G1-S and G2-M transitions by phosphorylation of CDC25A and CDC25C. 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. Promote cell cycle progression and tumorigenesis by down-regulating expression of a regulator of cell cycle progression, CDKN1B, at both transcriptional and post-translational levels. Phosphorylation of CDKN1B,induces 14-3-3-proteins binding, nuclear export and proteasome-dependent degradation. May affect the structure or silencing of chromatin by phosphorylating HP1 gamma/CBX3. Acts also as a regulator of homing and migration of bone marrow cells involving functional interaction with the CXCL12-CXCR4 signaling axis. **Subunit:** Isoform 2 is isolated as a monomer whereas isoform 1 complexes with other proteins. Binds to RP9. Isoform 1, but not isoform 2, binds BMX. Isoform 2 interacts with CDKN1B and FOXO3. Interacts with BAD. Interacts with PPP2CA; this interaction promotes dephosphorylation of PIM1, ubiquitination and proteasomal degradation. Interacts with HSP90, this interaction stabilizes PIM1 protein levels. Interacts (ubiquitinated form) with HSP70 and promotes its proteosomal degradation. Interacts with CDKN1A. Interacts with CDC25C. Interacts (via N-terminal 96 residues) with CDC25A. Interacts with MAP3K5. Interacts with MYC.

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	Subcellular Location: Isoform 2: Cytoplasm. Nucleus. Isoform 1: Cell membrane. **Tissue Specificity:** Expressed primarily in cells of the hematopoietic and germline lineages. Isoform 1 and isoform 2 are both expressed in prostate cancer cell lines. **Post-translational modifications:** Autophosphorylated on both serine/threonine and tyrosine residues. Phosphorylated. Interaction with PPP2CA promotes dephosphorylation. Ubiquitinated, leading to proteasomal degradation. **Similarity:** Belongs to the protein kinase superfamily. CAMK Ser/Thr protein kinase family. PIM subfamily. Contains 1 protein kinase domain. **Database links:** **Entrez Gene:** 5292 Human **Entrez Gene:** 18712 Mouse **Entrez Gene:** 24649 Rat Omim: 164960 Human **SwissProt:** P11309 Human **SwissProt:** P06803 Mouse **SwissProt:** P26794 Rat **Unigene:** 81170 Human **Unigene:** 405293 Mouse **Unigene:** 485038 Mouse **Unigene:** 34888 Rat **Entrez Gene:** 415116 Human **Entrez Gene:** 223775 Mouse Omim: 610580 Human **SwissProt:** Q86V86 Human **SwissProt:** P58750 Mouse **Unigene:** 530381 Human **Unigene:** Hs.530381 Human **Unigene:** 400129 Mouse Important **Note:** This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.