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# Anti-Pin1 Antibody Picoband™ (monoclonal, 5E5)

Catalog # ABO16609

## Product Information

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| **Application** | WB, IF, ICC, FC |
| **Primary Accession** | Q13526 |
| **Host** | Mouse |
| **Isotype** | IgG2b |
| **Reactivity** | Rat, Human, Monkey |
| **Clonality** | Monoclonal |
| **Format** | Lyophilized |
| **Description** | Anti-Pin1 Antibody Picoband™ (monoclonal, 5E5) . Tested in Flow Cytometry, IF, ICC, WB applications. This antibody reacts with Human, Monkey, Rat. |
| **Reconstitution** | Adding 0.2 ml of distilled water will yield a concentration of 500 □g/ml. |

## Additional Information

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| **Gene ID** | 5300 |
| **Other Names** | Peptidyl-prolyl cis-trans isomerase NIMA-interacting 1, 5.2.1.8, Peptidyl-prolyl cis-trans isomerase Pin1, PPIase Pin1, Rotamase Pin1, PIN1 |
| **Calculated MW** | 18243 |
| **Application Details** | Western blot, 0.25-0.5 □g/ml, Human, Monkey, Rat<br>Immunocytochemistry/Immunofluorescence, 5 □g/ml, Human<br>Flow Cytometry, 1-3 □g/1x10^6 cells, Human |
| **Source** | Eukaryota |
| **Contents** | Each vial contains 4 mg Trehalose, 0.9 mg NaCl and 0.2 mg Na2HPO4. |
| **Clone Names** | Clone: 5E5 |
| **Immunogen** | E.coli-derived human Pin1 recombinant protein (Position: M1-E163). Human Pin1 shares 95% amino acid (aa) sequence identity with mouse Pin1. |
| **Purification** | Immunogen affinity purified. |
| **Storage** | At -20°C for one year from date of receipt. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for six months. Avoid repeated freezing and thawing. |

## Protein Information

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| **Name** | PIN1 |

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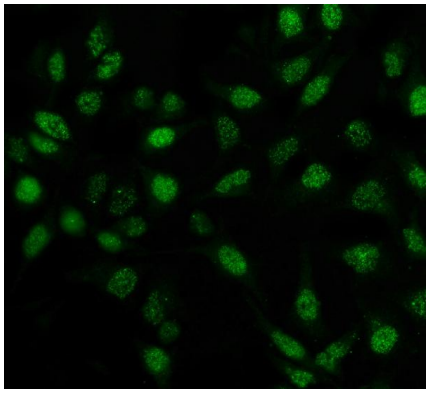
| **Function** | Peptidyl-prolyl cis/trans isomerase (PPIase) that binds to and isomerizes specific phosphorylated Ser/Thr-Pro (pSer/Thr-Pro) motifs (PubMed:21497122, PubMed:23623683, PubMed:29686383). By inducing conformational changes in a subset of phosphorylated proteins, acts as a molecular switch in multiple cellular processes (PubMed:21497122, PubMed:22033920, PubMed:23623683). Displays a preference for acidic residues located N-terminally to the proline bond to be isomerized. Regulates mitosis presumably by interacting with NIMA and attenuating its mitosis-promoting activity. Down-regulates kinase activity of BTK (PubMed:16644721). Can transactivate multiple oncogenes and induce centrosome amplification, chromosome instability and cell transformation. Required for the efficient dephosphorylation and recycling of RAF1 after mitogen activation (PubMed:15664191). Binds and targets PML and BCL6 for degradation in a phosphorylation-dependent manner (PubMed:17828269). Acts as a regulator of JNK cascade by binding to phosphorylated FBXW7, disrupting FBXW7 dimerization and promoting FBXW7 autoubiquitination and degradation: degradation of FBXW7 leads to subsequent stabilization of JUN (PubMed:22608923). May facilitate the ubiquitination and proteasomal degradation of RBBP8/CtIP through CUL3/KLHL15 E3 ubiquitin-protein ligase complex, hence favors DNA double-strand repair through error-prone non-homologous end joining (NHEJ) over error-free, RBBP8-mediated homologous recombination (HR) (PubMed:23623683, PubMed:27561354). Upon IL33-induced lung inflammation, catalyzes cis-trans isomerization of phosphorylated IRAK3/IRAK-M, inducing IRAK3 stabilization, nuclear translocation and expression of pro-inflammatory genes in dendritic cells (PubMed:29686383). Catalyzes cis-trans isomerization of phosphorylated phosphoglycerate kinase PGK1 under hypoxic conditions to promote its binding to the TOM complex and targeting to the mitochondrion (PubMed:26942675). Acts as a negative regulator of adipocyte browning by binding to phosphorylated PRDM16, targeting PRDM16 for degradation (By similarity). |
| **Cellular Location** | Nucleus. Nucleus speckle. Cytoplasm Note=Colocalizes with NEK6 in the nucleus (PubMed:16476580). Mainly localized in the nucleus but phosphorylation at Ser-71 by DAPK1 results in inhibition of its nuclear localization (PubMed:21497122) |
| **Tissue Location** | Expressed in immune cells in the lung (at protein level) (PubMed:29686383). The phosphorylated form at Ser-71 is expressed in normal breast tissue cells but not in breast cancer cells |

## Background

Peptidyl-prolyl cis-trans isomerase NIMA-interacting 1, also called DOD, is an enzyme that in humans is encoded by the PIN1 gene. It is mapped to 19p13.2. The enzyme binds to a subset of proteins and thus plays a role as a post phospho PIN1rol in regulating protein function. Studies have shown that the deregulation of PIN1 may play a pivotal role in various diseases. Notably, the up-regulation of PIN1 may be implicated in certain cancers, and the down-regulation of Pin1 may be implicated in Alzheimer's disease. Inhibitors of PIN1 may have therapeutic implications for cancer and immune disorders. PIN1 activity regulates the outcome of proline-directed kinase (e.g. MAPK, CDK or GSK3) signalling and consequently regulates cell proliferation (in part through control of cyclin D1 levels and stability) and cell survival. PIN1 also has an essential role in maintaining cell proliferation and regulating cyclin D1 function.

## Images

Figure 2. IF analysis of Pin1 using anti-Pin1 antibody (M00467-1).



Pin1 was detected in an immunocytochemical section of Hela cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 µg/mL mouse anti-Pin1 Antibody (M00467-1) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Mouse IgG (BA1126) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

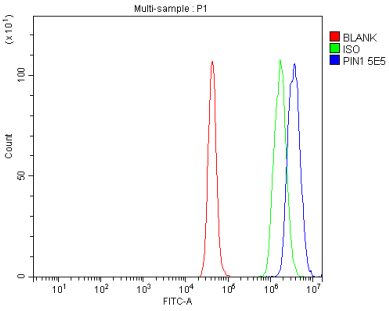



Figure 3. Flow Cytometry analysis of U87 cells using anti-Pin1 antibody (M00467-1).
Overlay histogram showing U87 cells stained with M00467-1 (Blue line). The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-Pin1 Antibody (M00467-1, 1 µg/1x$10^6$ cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 µg/1x$10^6$ cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was mouse IgG (1 µg/1x$10^6$) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

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