

Pin1 (E-5): sc-365028

BACKGROUND

NIMA was originally shown in *Aspergillus nidulans* to be necessary for entry into mitosis. NIMA-related mammalian proteins have since been identified as Nek1, Nek2 and Nek3. High expression of Nek1 is seen in male and female germ cell lines of mouse. Nek2 is the closest known mammalian relative to NIMA. Like NIMA, Nek2 expression peaks at the G₂ to M phase transition. Pin1 was originally identified as a NIMA-interacting protein. Pin1 is a peptidyl-prolyl *cis/trans* isomerase (PPlase), which specifically binds to phosphoserine-proline or phosphothreonine-proline bonds in mitotic phosphoproteins. While previously identified PPlases have been shown to be involved in protein folding, assembly and transport, Pin1 is the first PPlase to be identified as a required protein for cell viability.

REFERENCES

- Osmani, S.A., et al. 1988. Mitotic induction and maintenance by overexpression of a G₂-specific gene that encodes a potential protein kinase. *Cell* 53: 237-244.
- Letwin, K., et al. 1992. A mammalian dual specificity protein kinase, Nek1, is related to the NIMA cell cycle regulator and highly expressed in meiotic germ cells. *EMBO J.* 11: 3521-3531.
- Schultz, S.J., et al. 1994. Cell cycle-dependent expression of Nek2, a novel human protein kinase related to the NIMA mitotic regulator of *Aspergillus nidulans*. *Cell Growth Differ.* 5: 625-635.
- Lu, K.P., et al. 1996. A human peptidylprolyl isomerase essential for regulation of mitosis. *Nature* 380: 544-547.
- Yaffe, M.B., et al. 1997. Sequence-specific and phosphorylation-dependent proline isomerization: a potential mitotic regulatory mechanism. *Science* 278: 1957-1960.
- Ranganathan, R., et al. 1997. Structural and functional analysis of the mitotic rotamase Pin1 suggests substrate recognition is phosphorylation dependent. *Cell* 89: 875-886.
- Rhee, K., et al. 1997. The NIMA-related kinase 2, Nek2, is expressed in specific stages of the meiotic cell cycle and associates with meiotic chromosomes. *Development* 124: 2167-2177.
- Fry, A.M., et al. 1997. Characterization of mammalian DNA-related kinases. *Methods Enzymol.* 283: 270-282.

CHROMOSOMAL LOCATION

Genetic locus: PIN1 (human) mapping to 19p13.2; Pin1 (mouse) mapping to 9 A3.

SOURCE

Pin1 (E-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 116-146 near the C-terminus of Pin1 of human origin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PRODUCT

Each vial contains 200 µg IgG₃ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365028 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Pin1 (E-5) is recommended for detection of Pin1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

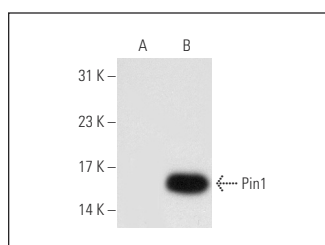
Pin1 (E-5) is also recommended for detection of Pin1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Pin1 siRNA (h): sc-36230, Pin1 siRNA (m): sc-36231, Pin1 shRNA Plasmid (h): sc-36230-SH, Pin1 shRNA Plasmid (m): sc-36231-SH, Pin1 shRNA (h) Lentiviral Particles: sc-36230-V and Pin1 shRNA (m) Lentiviral Particles: sc-36231-V.

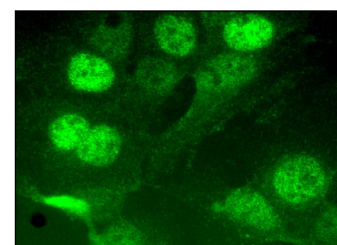
Molecular Weight of Pin1: 20 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, K-562 nuclear extract: sc-2130 or Pin1 (m): 293T Lysate: sc-122584.

DATA



Pin1 (E-5): sc-365028. Western blot analysis of Pin1 expression in non-transfected: sc-117752 (A) and mouse Pin1 transfected: sc-122584 (B) 293T whole cell lysates.



Pin1 (E-5): sc-365028. Immunofluorescence staining of formalin-fixed HepG2 cells showing nuclear and cytoplasmic localization.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.