SANTA CRUZ BIOTECHNOLOGY, INC.

Pin1 (N-19): sc-7413

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The Power to Question

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 G_2 to M phase transition. Pin1 was originally identified as a NIMA-interacting protein. Pin1 is a peptidyl-prolyl *cis/trans* isomerase (PPIase), which specifically binds to phosphoserine-proline or phosphothreonine-proline bonds in mitotic phosphoproteins. While previously identified PPIases have been shown to be involved in protein folding, assembly and transport, Pin1 is the first PPIase to be identified as a required protein for cell viability.

REFERENCES

1. Osmani, S.A., et al. 1988. Mitotic induction and maintenance by overexpression of a G_2-specific gene that encodes a potential protein kinase. Cell 53: 237-244.
2. 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.
3. 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.
4. Lu, K.P., et al. 1996. A human peptidyl-prolyl isomerase essential for regulation of mitosis. Nature 380: 544-547.
5. Yaffe, M.B., et al. 1997. Sequence-specific and phosphorylation-dependent proline isomerization: a potential mitotic regulatory mechanism. Science 278: 1957-1960.

CHROMOSOMAL LOCATION

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

SOURCE

Pin1 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Pin1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-7413 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

RESEARCH USE

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

APPLICATIONS

Pin1 (N-19) is recommended for detection of Pin1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 (N-19) 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 Jurkat nuclear extract: sc-2132.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Hamdane, M., et al. 2002. Pin1. A therapeutic target in Alzheimer neurodegeneration. J. Mol. Neurosci. 19: 275-287.
2. Allen, B., et al. 2002. Abundant Tau filaments and nonapoptotic neurodegeneration in transgenic mice expressing human P301S Tau protein. J. Neurosci. 22: 9340-9351.
3. Holzer, M., et al. 2002. Inverse association of Pin1 and Tau accumulation in Alzheimer's disease hippocampus. Acta Neuropathol. 104: 471-481.
4. Rosselet, C., et al. 2006. Nursing-induced somatosensory cortex plasticity: temporally decoupled changes in neuronal receptive field properties are accompanied by modifications in activity-dependent protein expression. J. Neurosci. 26: 10667-10676.
5. Pani, E., et al. 2008. Pin1 interacts with c-Myb in a phosphorylation-dependent manner and regulates its transactivation activity. Biochim. Biophys. Acta 1783: 1121-1128.