SANTA CRUZ BIOTECHNOLOGY, INC.

p-NFATc1 (Ser 259): sc-32979

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The NFAT (nuclear factor of activated T cells) family of transcription factors include the cytoplasmic NFAT transcription factors (NFATc1, NFATc2, NFATc3, NFATc4 and NFATc5) and nuclear NFAT (NFATn). Although primary cytoplasmic proteins, the nuclear translocation and transcriptional activity of the NFATc family is essential to developmental, differentiation and adaptation processes. NFATc1 is present in uninduced cells and translocates to the nucleus upon calcium mobilization. The phosphatase calcineurin promotes nuclear accumulation of NFATc. PKA causes phosphorylation and cytoplasmic accumulation of NFATc1 in direct opposition to calcineurin by phosphorylating Ser 245, Ser 269 and Ser 294 in the conserved serine-proline repeat domain.

REFERENCES

1. Okamura, H., et al. 2000. Concerted dephosphorylation of the transcription factor NFAT1 induces a conformational switch that regulates transcriptional activity. Mol. Cell 6: 539-550.
2. Sheridan, C.M., et al. 2002. Protein kinase A negatively modulates the nuclear accumulation of NFATc1 by priming for subsequent phosphorylation by glycogen synthase kinase-3. J. Biol. Chem. 277: 48664-48676.
3. Yang, T.T., et al. 2002. Phosphorylation of NFATc4 by p38 mitogen-activated protein kinases. Mol. Cell. Biol. 22: 3892-3904.
4. Okamura, H., et al. 2004. A conserved docking motif for CK1 binding controls the nuclear localization of NFAT1. Mol. Cell. Biol. 24: 4184-4195.

CHROMOSOMAL LOCATION

Genetic locus: Nfatc1 (mouse) mapping to 18 E3.

SOURCE

p-NFATc1 (Ser 259) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 259 phosphorylated NFATc1 of mouse 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-32979 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.

PROTOCOLS

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

APPLICATIONS

p-NFATc1 (Ser 259) is recommended for detection of Ser 259 phosphorylated NFATc1 SRR-2/NLS domain of mouse and rat origin by Western Blotting (starting dilution 1:200, 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).

p-NFATc1 (Ser 259) is also recommended for detection of correspondingly phosphorylated NFATc1 SRR-2/NLS domain in additional species, including avian.

Suitable for use as control antibody for NFATc1 siRNA (m): sc-36054, NFATc1 shRNA Plasmid (m): sc-36054-SH and NFATc1 shRNA (m) Lentiviral Particles: sc-36054-V.

Molecular Weight of p-NFATc1: 90/110/140 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Lunde, I.G., et al. 2011. Angiotensin II and norepinephrine activate specific calcineurin-dependent NFAT transcription factor isoforms in cardiomyocytes. J. Appl. Physiol. 111: 1278-1289.
2. Dalagiorgou, G., et al. 2013. Mechanical stimulation of polycystin-1 induces human osteoblastic gene expression via potentiation of the calcineurin/NFAT signaling axis. Cell. Mol. Life Sci. 70: 167-180.
3. Patra, A.K., et al. 2013. An alternative NFAT-activation pathway mediated by IL-7 is critical for early thymocyte development. Nat. Immunol. 14: 127-135.
5. Jiang, D.S., et al. 2014. IRF8 suppresses pathological cardiac remodelling by inhibiting calcineurin signalling. Nat. Commun. 5: 3303.