

p-NFATc3 (Ser 265): sc-32982

BACKGROUND

Members of the NFAT (nuclear factor of activated T cells) family of transcription factors are related to NF κ B/Rel proteins and form cooperative complexes with the AP-1 proteins, Fos and Jun, on DNA to regulate cytokine expression in T cells. NFAT proteins are widely expressed and alternatively modified to generate splice variants, and they are localized to both the cytosol (NFATc) and to the nucleus (NFATn). NFATc2, NFATc1, and NFATc3 are predominantly expressed in immune cells, and NFATc1 and NFATc4 are expressed at high levels in cardiac tissues. In addition to activating cytokine gene transcription, NFATc1 is also implicated in cardiac valve development, and NFATc4 is involved in cardiac hypertrophy. NFAT5 is detected in both immune and non-immune cells and, like other NFAT proteins, it contains a highly conserved Rel-like binding domain that mediates NFAT proteins associating with specific consensus sequences on DNA. NFAT proteins are activated by increases in intracellular calcium, which leads to the calmodulin-dependent phosphatase, calcineurin, dephosphorylating NFAT proteins. This activating event induces a conformational change in the protein structure that exposes the nuclear localization signal and facilitates the translocation of NFAT proteins from the cytosol into the nucleus. NFATc3 is phosphorylated at serine residues 169, 171, 172, 174, 236, 240, 244, 265 and 344.

REFERENCES

- Hoey, T., et al. 1995. Isolation of two new members of the NFAT gene family and functional characterization of the NFAT proteins. *Immunity* 2: 461-472.
- Ho, S.N. et al. 1995. NFATc3, a lymphoid-specific NFATc family member that is calcium-regulated and exhibits distinct DNA binding specificity. *J. Biol. Chem.* 270: 19898-19907.

CHROMOSOMAL LOCATION

Genetic locus: NFATC3 (human) mapping to 16q22.1; Nfatc3 (mouse) mapping to 8 D3.

SOURCE

p-NFATc3 (Ser 265) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 265 phosphorylated NFATc3 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-32982 P, (100 μ g 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.

PROTOCOLS

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

APPLICATIONS

p-NFATc3 (Ser 265) is recommended for detection of Ser 265 phosphorylated NFATc3 SRR-2/NLS domain of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

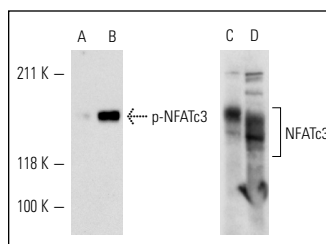
p-NFATc3 (Ser 265) is also recommended for detection of correspondingly phosphorylated Ser on NFATc3 SRR-2/NLS domain in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for NFATc3 siRNA (h): sc-29413, NFATc3 siRNA (m): sc-36057, NFATc3 shRNA Plasmid (h): sc-29413-SH, NFATc3 shRNA Plasmid (m): sc-36057-SH, NFATc3 shRNA (h) Lentiviral Particles: sc-29413-V and NFATc3 shRNA (m) Lentiviral Particles: sc-36057-V.

Molecular Weight of p-NFATc3: 120-190 kDa.

Positive Contols: Jurkat whole cell lysate: sc-2204 or Jurkat + IL-2 cell lysate: sc-2278.

DATA



Western blot analysis of NFATc3 phosphorylation in untreated (A, C) and IL-2-treated (B, D) Jurkat whole cell lysates. Antibodies tested include p-NFATc3 (Ser 265): sc-32982 (A, B) and NFATc3 (M-75): sc-8321 (C, D).

SELECT PRODUCT CITATIONS

- Jahnke, V.E., et al. 2009. Control of mitochondrial biogenesis, ROS level, and cytosolic Ca²⁺ concentration during the cell cycle and the onset of differentiation in L6E9 myoblasts. *Am. J. Physiol., Cell Physiol.* 296: C1185-C1194.
- Somvanshi, R.K., et al. 2011. Receptor specific crosstalk and modulation of signaling upon heterodimerization between B₁-adrenergic receptor and somatostatin receptor-5. *Cell Signal.* 23: 794-811.
- 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.
- Chakraborty, T., et al. 2011. Neem leaf glycoprotein inhibits CD4⁺CD25⁺Foxp3⁺ Tregs to restrict murine tumor growth. *Immunotherapy* 3: 949-969.

RESEARCH USE

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