

p-NFATc3 (Ser 169): sc-68701

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). NFAT1, NFAT2 and NFAT4 are predominantly expressed in immune cells, and NFAT2 and NFAT3 are expressed at high levels in cardiac tissues. In addition to activating cytokine gene transcription, NFAT2 is also implicated in cardiac valve development, and NFAT3 is involved in cardiac hypertrophy. NFAT5 is detected in both immune and nonimmune 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 265 by the JNK protein.

REFERENCES

1. 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.
2. Park, J., et al. 1996. Characterization of a new isoform of the NFAT (nuclear factor of activated T cells) gene family member NFATc. *J. Biol. Chem.* 271: 20914-20921.
3. Rao, A., et al. 1997. Transcription factors of the NFAT family: regulation and function. *Annu. Rev. Immunol.* 15: 707-747.
4. Lyakh, L., et al. 1997. Expression of NFAT-family proteins in normal human T cells. *Mol. Cell. Biol.* 17: 2475-2484.
5. Amasaki, Y., et al. 1998. Distinct NFAT family proteins are involved in the nuclear NFAT-DNA binding complexes from human thymocyte subsets. *J. Immunol.* 160: 2324-2333.
6. Ranger, A.M., et al. 1998. The transcription factor NFATc is essential for cardiac valve formation. *Nature* 392: 186-190.
7. 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.

CHROMOSOMAL LOCATION

Genetic locus: NFATC3 (human) mapping to 16q22.2; Nfatc3 (mouse) mapping to 8 D.

SOURCE

p-NFATc3 (Ser 169) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 169 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-68701 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

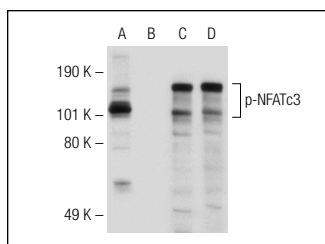
p-NFATc3 (Ser 169) is recommended for detection of Ser 169 phosphorylated NFATc3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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: 115-120 kDa.

Positive Controls: 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 lambda protein phosphatase (sc-200312A) treated (B, D) Jurkat whole cell lysates. Antibodies tested include p-NFATc3 (Ser 169): sc-68701 (A, B) and NFATc3 (M-75): sc-8321 (C, D).

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.



Try **p-NFATc3 (H-2): sc-365883**, our highly recommended monoclonal alternative to p-NFATc3 (Ser 169).