

# p-NFATc3 (Ser 174): sc-68704

## BACKGROUND

Members of the NFAT (nuclear factor of activated T cells) family of transcription factors are related to NF $\kappa$ 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). NFATc1 (NFATc), NFATc2 (NFATp) and NFATc3 (NFAT4, NFSTx) are predominantly expressed in immune cells. 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.

## REFERENCES

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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. Ranger, A.M., et al. 1998. The transcription factor NF-ATc is essential for cardiac valve formation. *Nature* 392: 186-190.
6. 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.
7. Kel, A., et al. 1999. Recognition of NFATp/AP-1 composite elements within genes induced upon the activation of immune cells. *J. Mol. Biol.* 288: 353-376.
8. Lopez-Rodriguez, C., et al. 1999. JNFAT5, a constitutively nuclear NFAT protein that does not cooperate with Fos and Jun. *Proc. Natl. Acad. Sci. USA* 96: 7214-7219.

## CHROMOSOMAL LOCATION

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

## SOURCE

p-NFATc3 (Ser 174) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 174 phosphorylated NFATc3 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 100  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-68704 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

p-NFATc3 (Ser 174) is recommended for detection of Ser 174 phosphorylated NFATc3 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).

p-NFATc3 (Ser 174) is also recommended for detection of correspondingly phosphorylated NFATc3 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: 115-120 kDa.

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

## 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) 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.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.