

# NFAT5 (N-18): sc-5501

## BACKGROUND

Members of the NFAT (nuclear factor of activated T cells) family of transcription factors are related to NFκB/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, 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.

## 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. Ranger, A.M., et al. 1998. The transcription factor NFATc 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: NFAT5 (human) mapping to 16q22.1; Nfat5 (mouse) mapping to 8 D3.

## SOURCE

NFAT5 (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of NFAT5 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-5501 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-5501 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

NFAT5 (N-18) is recommended for detection of NFAT5a, NFAT5b, NFAT5c, NFAT5z1 and NFAT5z2 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).

NFAT5 (N-18) is also recommended for detection of NFAT5a, NFAT5b, NFAT5c, NFAT5z1 and NFAT5z2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for NFAT5 siRNA (h): sc-43968, NFAT5 siRNA (m): sc-38122, NFAT5 shRNA Plasmid (h): sc-43968-SH, NFAT5 shRNA Plasmid (m): sc-38122-SH, NFAT5 shRNA (h) Lentiviral Particles: sc-43968-V and NFAT5 shRNA (m) Lentiviral Particles: sc-38122-V.

NFAT5 (N-18) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of NFAT5: 170 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HEL 92.1.7 cell lysate: sc-2270 or HeLa whole cell lysate: sc-2200.

## SELECT PRODUCT CITATIONS

1. Cotton, L.M., et al. 2010. Organic cation/carnitine transporter, OCTN2, transcriptional activity is regulated by osmotic stress in epididymal cells. *Mol. Reprod. Dev.* 77: 114-125.
2. Ueno, M., et al. 2013. Fat-specific protein 27 modulates nuclear factor of activated T cells 5 and the cellular response to stress. *J. Lipid Res.* 54: 734-743.

## 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 **NFAT5 (F-9): sc-398171** or **NFAT5 (37X): sc-101098**, our highly recommended monoclonal alternatives to NFAT5 (N-18).