

NFAT5 (37X): sc-101098

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, 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

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- 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.
- Rao, A., et al. 1997. Transcription factors of the NFAT family: regulation and function. *Annu. Rev. Immunol.* 15: 707-747.
- Lyakh, L., et al. 1997. Expression of NFAT-family proteins in normal human T cells. *Mol. Cell. Biol.* 17: 2475-2484.
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- 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.
- 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.
- Lopez-Rodriguez, C., et al. 1999. NFAT5, a constitutively nuclear NFAT protein that does not cooperate with Fos and Jun. *Proc. Natl. Acad. Sci. USA* 96: 7214-7219.
- Ju, J., et al. 2007. Downregulation of NFAT5 by RNA interference reduces monoclonal antibody productivity of hybridoma cells. *Cell Res.* 17: 264-270.

STORAGE

Store at 4°C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

CHROMOSOMAL LOCATION

Genetic locus: NFAT5 (human) mapping to 16q22.1.

SOURCE

NFAT5 (37X) is a mouse monoclonal antibody raised against recombinant NFAT5 of human origin.

PRODUCT

Each vial contains 100 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

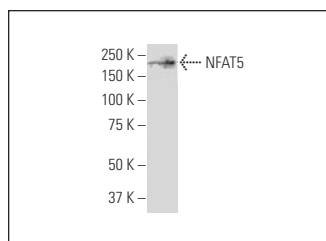
NFAT5 (37X) is recommended for detection of NFAT5 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

Molecular Weight of NFAT5: 170 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, HEL 92.1.7 cell lysate: sc-2270 or HeLa whole cell lysate: sc-2200.

DATA



NFAT5 (37X): sc-101098. Western blot analysis of NFAT5 expression in HeLa nuclear extract.

SELECT PRODUCT CITATIONS

- Hernández-Ochoa, E.O., et al. 2012. Elevated extracellular glucose and uncontrolled type 1 diabetes enhance NFAT5 signaling and disrupt the transverse tubular network in mouse skeletal muscle. *Exp. Biol. Med.* 237: 1068-1083.
- Yan, K., et al. 2022. MicroRNA-20b carried by mesenchymal stem cell-derived extracellular vesicles protects alveolar epithelial type II cells from *Mycobacterium tuberculosis* infection *in vitro*. *Infect. Genet. Evol.* 101: 105292.

RESEARCH USE

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