SANTA CRUZ BIOTECHNOLOGY, INC.

NFAT5 (H-300): sc-13035

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

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

SOURCE

NFAT5 (H-300) is a rabbit polyclonal antibody raised against amino acids 67-300 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.

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-13035 X, 200 µg/0.1 ml.

APPLICATIONS

NFAT5 (H-300) is recommended for detection of NFAT5a, NFAT5b, NFAT5c, NFAT5z1 and NFAT5z2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

NFAT5 (H-300) is also recommended for detection of NFAT5a, NFAT5b, NFAT5c, NFAT5z1 and NFAT5z2 in additional species, including equine, canine, bovine and porcine.

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.

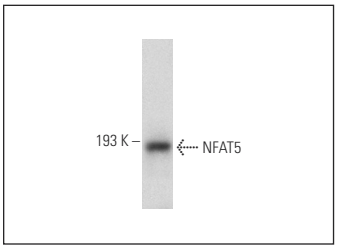
NFAT5 (H-300) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of NFAT5: 170 kDa.

STORAGE

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

DATA



NFAT5 (H-300): sc-13035. Western blot analysis of NFAT5 expression in Jurkat nuclear extract.

SELECT PRODUCT CITATIONS

1. Esensten, J.H., et al. 2005. NFAT5 binds to the TNF promoter distinctly from NFATp, c, 3 and 4, and activates TNF transcription during hypertonic stress alone. Nucleic Acids Res. 33: 3845-3854.
2. Ito, T., et al. 2007. Degradation of NFAT5, a transcriptional regulator of osmotic stress-related genes, is a critical event for doxorubicin-induced cytotoxicity in cardiac myocytes. J. Biol. Chem. 282: 1152-1160.
3. Huang, W., et al. 2010. Tonicity-responsive microRNAs contribute to the maximal induction of osmoregulatory transcription factor OREBP in response to high-NaCl hypertonicity. Nucleic Acids Res. 39: 475-485.
4. Ranjbar, S., et al. 2012. Regulation of *Mycobacterium tuberculosis*-dependent HIV-1 transcription reveals a new role for NFAT5 in the toll-like receptor pathway. PLoS Pathog. 8: e1002620.
5. Izumi, Y., et al. 2012. Mutations that reduce its specific DNA binding inhibit high NaCl-induced nuclear localization of the osmoprotective transcription factor NFAT5. Am. J. Physiol. Cell Physiol. 303: C1061-C1069.
6. Dahiya, S., et al. 2014. CCAAT enhancer binding protein and nuclear factor of activated T cells regulate HIV-1 LTR via a novel conserved downstream site in cells of the monocyte-macrophage lineage. PLoS ONE 9: e88116.

RESEARCH USE

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

PROTOCOLS

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