SANTA CRUZ BIOTECHNOLOGY, INC.

NFAT5 (F-9): sc-398171

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; Nfat5 (mouse) mapping to 8 D3.

SOURCE

NFAT5 (F-9) is a mouse monoclonal antibody raised against amino acids 67-300 of NFAT5 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain 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-398171 X, 200 µg/0.1 ml.

NFAT5 (F-9) is available conjugated to agarose (sc-398171 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398171 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398171 PE), fluorescein (sc-398171 FITC), Alexa Fluor® 488 (sc-398171 AF488), Alexa Fluor® 546 (sc-398171 AF546), Alexa Fluor® 594 (sc-398171 AF594) or Alexa Fluor® 647 (sc-398171 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398171 AF680) or Alexa Fluor® 790 (sc-398171 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

PROTOCOLS

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

APPLICATIONS

NFAT5 (F-9) is recommended for detection of NFAT5a, NFAT5b, NFAT5c, NFAT5z1 and NFAT5z2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (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 (F-9) is also recommended for detection of NFAT5a, NFAT5b, NFAT5c, NFAT5z1 and NFAT5z2 in additional species, including equine, canine, bovine and porcine.

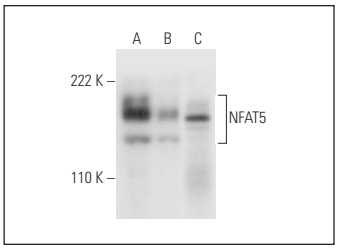
Suitable for use as control antibody for NFAT5 siRNA (h): sc-43968, NFAT5 siRNA (m): sc-38122, NFAT5 shRNA Plasmid (h): sc-43968-SH, NFAT5 shRNA Plasmid (m): sc-38122-SH, NFAT5 shRNA (h) Lentiviral Particles: sc-43968-V and NFAT5 shRNA (m) Lentiviral Particles: sc-38122-V.

NFAT5 (F-9) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

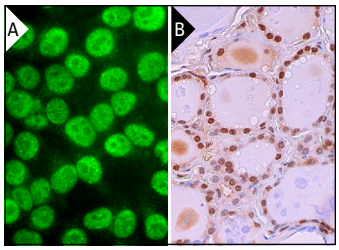
Molecular Weight of NFAT5: 170 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132, HeLa nuclear extract: sc-2120 or human skeletal muscle extract: sc-363776.

DATA



NFAT5 (F-9): sc-398171. Western blot analysis of NFAT5 expression in Jurkat (**A**) and HeLa (**B**) nuclear extracts and human skeletal muscle tissue extract (**C**).



NFAT5 (F-9): sc-398171. Immunofluorescence staining of formalin-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Qin, J.J., et al. 2017. Targeting the NFAT1-MDM2-MDMX network inhibits the proliferation and invasion of prostate cancer cells, independent of p53 and androgen. Front. Pharmacol. 8: 917.
2. Kappert, L., et al. 2021. Loss of NFAT5 promotes lipid accumulation in vascular smooth muscle cells. FASEB J. 35: e21831.
3. Cheung, C.Y., et al. 2022. Unconventional tonicity-regulated nuclear trafficking of NFAT5 mediated by KPNB1, XPOT and RUVBL2. J. Cell Sci. 135: jcs259280.

RESEARCH USE

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