

NFATc3 (F-1): sc-8405

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). 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

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.

CHROMOSOMAL LOCATION

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

SOURCE

NFATc3 (F-1) is a mouse monoclonal antibody raised against amino acids 321-395 of NFATc3 of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG₁ 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-8405 X, 200 μ g/0.1 ml.

NFATc3 (F-1) is available conjugated to agarose (sc-8405 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-8405 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8405 PE), fluorescein (sc-8405 FITC), Alexa Fluor[®] 488 (sc-8405 AF488), Alexa Fluor[®] 546 (sc-8405 AF546), Alexa Fluor[®] 594 (sc-8405 AF594) or Alexa Fluor[®] 647 (sc-8405 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-8405 AF680) or Alexa Fluor[®] 790 (sc-8405 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

NFATc3 (F-1) is recommended for detection of NFATc3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

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.

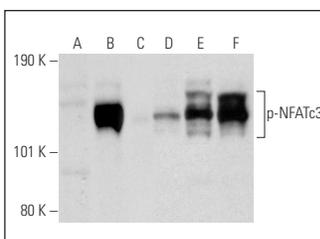
NFATc3 (F-1) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of dephosphorylated NFATc3: 130 kDa.

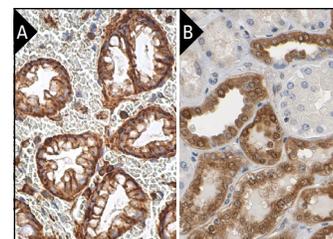
Molecular Weight of phosphorylated NFATc3: 190 kDa.

Positive Controls: Ramos cell lysate: sc-2216, Jurkat whole cell lysate: sc-2204 or Jurkat nuclear extract: sc-2132.

DATA



Western blot analysis of NFATc3 phosphorylation in untreated (A, B, D, E) and lambda protein phosphatase (sc-200312A) treated (C, F) Jurkat whole cell lysates (A, D) and Jurkat nuclear extracts (B, C, E, F). Antibodies tested include p-NFATc3 (C-3): sc-365786 (A, B, C) and NFATc3 (F-1): sc-8405 (D, E, F).



NFATc3 (F-1): sc-8405. Immunoperoxidase staining of formalin fixed, paraffin-embedded human stomach tissue showing cytoplasmic and membrane staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic and nuclear staining of cells in tubuli. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

SELECT PRODUCT CITATIONS

1. Sotokawa, T. 1990. A systematic approach to preventing intracanal breakage of endodontic files. *Endod. Dent. Traumatol.* 6: 60-62.
2. Zhu, L., et al. 2022. Dapl1 controls NFATc2 activation to regulate CD8⁺ T cell exhaustion and responses in chronic infection and cancer. *Nat. Cell Biol.* 24: 1165-1176.
3. Matsuno, M., et al. 2023. O-GlcNAcylation-induced GSK-3 β activation deteriorates pressure overload-induced heart failure via lack of compensatory cardiac hypertrophy in mice. *Front. Endocrinol.* 14: 1122125.

RESEARCH USE

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