

NFATc1 (7A6): sc-7294

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, it 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: NFATC1 (human) mapping to 18q23; Nfatc1 (mouse) mapping to 18 E3.

SOURCE

NFATc1 (7A6) is a mouse monoclonal antibody raised against amino acids 197-304 of NFATc1 of human 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-7294 X, 200 μ g/0.1 ml.

NFATc1 (7A6) is available conjugated to agarose (sc-7294 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-7294 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-7294 PE), fluorescein (sc-7294 FITC), Alexa Fluor[®] 488 (sc-7294 AF488), Alexa Fluor[®] 546 (sc-7294 AF546), Alexa Fluor[®] 594 (sc-7294 AF594) or Alexa Fluor[®] 647 (sc-7294 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-7294 AF680) or Alexa Fluor[®] 790 (sc-7294 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, NFATc1 (7A6) is available conjugated to either PerCP (sc-7294 PerCP), PerCP-Cy5.5 (sc-7294 PCPC5) or Alexa Fluor[®] 405 (sc-7294 AF405), 100 tests in 2 ml, for IF, IHC(P) 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

NFATc1 (7A6) is recommended for detection of NFATc1 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 flow cytometry (1 μ g per 1 x 10⁶ cells).

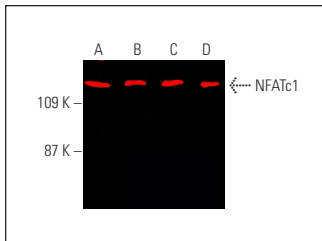
Suitable for use as control antibody for NFATc1 siRNA (h): sc-29412, NFATc1 siRNA (m): sc-36054, NFATc1 siRNA (r): sc-77366, NFATc1 shRNA Plasmid (h): sc-29412-SH, NFATc1 shRNA Plasmid (m): sc-36054-SH, NFATc1 shRNA Plasmid (r): sc-77366-SH, NFATc1 shRNA (h) Lentiviral Particles: sc-29412-V, NFATc1 shRNA (m) Lentiviral Particles: sc-36054-V and NFATc1 shRNA (r) Lentiviral Particles: sc-77366-V.

NFATc1 (7A6) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

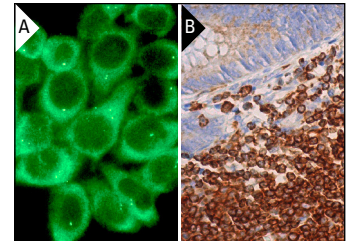
Molecular Weight of NFATc1 isoforms 1/2/3: 90/110/140 kDa.

Positive Controls: Ramos cell lysate: sc-2216, NAMALWA cell lysate: sc-2234 or GA-10 whole cell lysate: sc-364230.

DATA



NFATc1 (7A6): sc-7294. Near-infrared western blot analysis of NFATc1 expression in NAMALWA (A), Raji (B), Ramos (C) and GA-10 (D) whole cell lysates. Detection reagent used: m-IgG κ BP-CFL 790: sc-516181.



NFATc1 (7A6): sc-7294. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing cytoplasmic and membrane staining of lymphoid cells (B).

SELECT PRODUCT CITATIONS

- Kinoshita, S., et al. 1998. Host control of HIV-1 parasitism in T cells by the nuclear factor of activated T cells. *Cell* 95: 595-604.
- Wu, M., et al. 2017. G α_{13} negatively controls osteoclastogenesis through inhibition of the Akt-GSK3 β -NFATc1 signalling pathway. *Nat. Commun.* 8: 13700.
- Zhao, X., et al. 2017. JNK1 negatively controls antifungal innate immunity by suppressing CD23 expression. *Nat. Med.* 23: 337-346.
- Okabe, I., et al. 2017. IL-15 and RANKL play a synergistically important role in osteoclastogenesis. *J. Cell. Biochem.* 118: 739-747.

RESEARCH USE

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

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