

NFATc3 (A-17): sc-23814

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.
4. Lyakh, L., et al. 1997. Expression of NFAT-family proteins in normal human T cells. *Mol. Cell. Biol.* 17: 2475-2484.
5. Ranger, A.M., et al. 1998. The transcription factor NFATc is essential for cardiac valve formation. *Nature* 392: 186-190.
6. 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.

CHROMOSOMAL LOCATION

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

SOURCE

NFATc3 (A-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NFATc3 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-23814 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-23814 X, 200 μ g/0.1 ml.

RESEARCH USE

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

APPLICATIONS

NFATc3 (A-17) 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), 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).

NFATc3 (A-17) is also recommended for detection of NFATc3 in additional species, including equine, canine, bovine and avian.

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 (A-17) 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 THP-1 cell lysate: sc-2238.

SELECT PRODUCT CITATIONS

1. Gonzalez Bosc, L.V., et al. 2005. Nuclear factor of activated T cells and serum response factor cooperatively regulate the activity of an α -actin intronic enhancer. *J. Biol. Chem.* 280: 26113-26120.
2. Jabr, R.I., et al. 2007. Nuclear translocation of calcineurin A β but not calcineurin A α by platelet-derived growth factor in rat aortic smooth muscle. *Am. J. Physiol., Cell Physiol.* 292: C2213-C2225.
3. Rana, O.R., et al. 2009. Regulation of nerve growth factor in the heart: the role of the calcineurin-NFAT pathway. *J. Mol. Cell. Cardiol.* 46: 568-578.
4. Gómez-Sintes, R. and Lucas, J.J. 2010. NFAT/Fas signaling mediates the neuronal apoptosis and motor side effects of GSK-3 inhibition in a mouse model of lithium therapy. *J. Clin. Invest.* 120: 2432-2445.
5. Banerjee, S.K., et al. 2010. Activation of cardiac hypertrophic signaling pathways in a transgenic mouse with the human PRKAG2 Thr400Asn mutation. *Biochim. Biophys. Acta* 1802: 284-291.

STORAGE

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



Try **NFATc3 (F-1): sc-8405**, our highly recommended monoclonal alternative to NFATc3 (A-17). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **NFATc3 (F-1): sc-8405**.