

p-NFATc4 (80.S168/170): sc-135771

BACKGROUND

NFATc4 (nuclear factor of activated T cells, cytoplasmic, calcineurin-dependent 4) is a member of the nuclear factors of activated T cells DNA-binding transcription complex that influences cytokine gene expression, cardiac hypertrophy and adipocyte differentiation. This complex consists of at least two components: a cytosolic component that translocates to the nucleus upon T cell receptor (TCR) stimulation and an inducible nuclear component. Other members of this family participate in the formation of this complex. NFATc4 plays a role in the inducible expression of cytokine genes in T cells, including the induction of IL-2 and IL-4. p38 MAP kinase phosphorylates multiple residues, including serine 168 and serine 170, in the NFAT homology domain of NFATc4.

REFERENCES

1. Yang, T., et al. 2001. Requirement of two NFATc4 transactivation domains for CBP potentiation. *J. Biol. Chem.* 276: 39569-39576.
2. Yang, T.T., et al. 2002. Phosphorylation of NFATc4 by p38 mitogen-activated protein kinases. *Mol. Cell. Biol.* 22: 3892-3904.
3. Wilkins, B.J., et al. 2002. Targeted disruption of NFATc3, but not NFATc4, reveals an intrinsic defect in calcineurin-mediated cardiac hypertrophic growth. *Mol. Cell. Biol.* 22: 7603-7613.
4. Graef, I.A., et al. 2003. Neurotrophins and netrins require calcineurin/NFAT signaling to stimulate outgrowth of embryonic axons. *Cell* 113: 657-670.
5. Mathew, S., et al. 2004. A ternary complex of transcription factors, Nishéd and NFATc4, and co-activator p300 bound to an intronic sequence, intronic regulatory element, is pivotal for the upregulation of Myosin light chain-IIV gene in cardiac hypertrophy. *J. Biol. Chem.* 279: 41018-41027.

CHROMOSOMAL LOCATION

Genetic locus: NFATC4 (human) mapping to 14q12; Nfatc4 (mouse) mapping to 14 C3.

SOURCE

p-NFATc4 (80.S168/170) is a mouse monoclonal antibody raised against a short amino acid sequence containing Ser 168 and Ser 170 dually phosphorylated NFATc4 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-135771 X, 200 µg/0.1 ml.

p-NFATc4 (80.S168/170) is available conjugated to agarose (sc-135771 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; and to HRP (sc-135771 HRP), 200 µg/ml, for WB, IHC(P) and ELISA.

STORAGE

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

APPLICATIONS

p-NFATc4 (80.S168/170) is recommended for detection of Ser 168 and Ser 170 dually phosphorylated NFATc4 of mouse, rat and 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

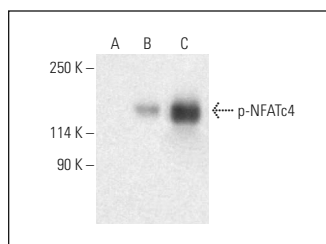
Suitable for use as control antibody for NFATc4 siRNA (h): sc-38115, NFATc4 siRNA (m): sc-38116, NFATc4 shRNA Plasmid (h): sc-38115-SH, NFATc4 shRNA Plasmid (m): sc-38116-SH, NFATc4 shRNA (h) Lentiviral Particles: sc-38115-V and NFATc4 shRNA (m) Lentiviral Particles: sc-38116-V.

p-NFATc4 (80.S168/170) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

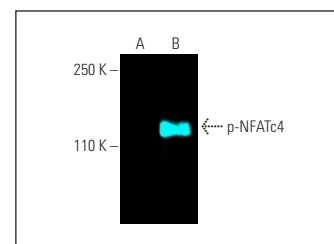
Molecular Weight of p-NFATc4: 140-160 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or NFATc4 (h): 293T Lysate: sc-116481 or NFATc4 (m): 293T Lysate: sc-122039.

DATA



p-NFATc4 (80.S168/170): sc-135771. Western blot analysis of NFATc4 phosphorylation in non-transfected: sc-117752 (A), human NFATc4 transfected: sc-116481 (B) and mouse NFATc4 transfected: sc-122039 (C) 293T whole cell lysates. Detection reagent used: m-IgG_{2a} BP-HRP: sc-542731.



p-NFATc4 (80.S168/170): sc-135771. Fluorescent western blot analysis of NFATc4 phosphorylation in non-transfected: sc-117752 (A) and mouse NFATc4 transfected: sc-122039 (B) 293T whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG_{2a} BP-CFL 647: sc-542738.

SELECT PRODUCT CITATIONS

1. Li, S., et al. 2017. Inhibition of phosphodiesterase-5 suppresses calcineurin/NFAT-mediated TRPC6 expression in pulmonary artery smooth muscle cells. *Sci. Rep.* 7: 6088.
2. Shin, N., et al. 2021. Pimecrolimus interferes the therapeutic efficacy of human mesenchymal stem cells in atopic dermatitis by regulating NFAT-COX2 signaling. *Stem Cell Res. Ther.* 12: 482.
3. Pan, R., et al. 2022. CAMTA1-PPP3CA-NFATc4 multi-protein complex mediates the resistance of colorectal cancer to oxaliplatin. *Cell Death Discov.* 8: 129.
4. Romaine, A., et al. 2022. Integrin α 11 β 1 and syndecan-4 dual receptor ablation attenuate cardiac hypertrophy in the pressure overloaded heart. *Am. J. Physiol. Heart Circ. Physiol.* 322: H1057-H1071.

RESEARCH USE

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