SANTA CRUZ BIOTECHNOLOGY, INC.

# NFATc1 (K-18): sc-1149

## 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, 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.

## SOURCE

NFATc1 (K-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NFATc1 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-1149 P, (100 µg 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-1149 X, 200 µg/0.1 ml.

## APPLICATIONS

NFATc1 (K-18) is recommended for detection of members of the NFAT family of transcription factors 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)], 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).

NFATc1 (K-18) is also recommended for detection of members of the NFAT family of transcription factors in additional species, including equine, canine, bovine, porcine and avian.

NFATc1 (K-18) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

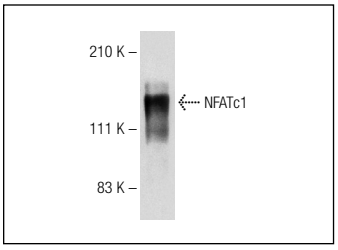
Molecular Weight of NFATc1 isoforms: 90/110/140 kDa.

Positive Controls: Ramos cell lysate: sc-2216 or Jurkat + IL-2 cell lysate: sc-2278.

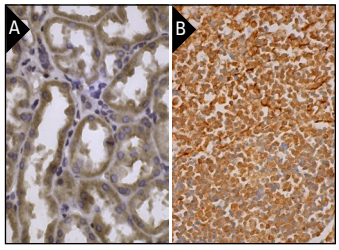
## STORAGE

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

## DATA




NFATc1 (K-18): sc-1149. Western blot analysis of NFATc1expression in Ramos whole cell lysate.




NFATc1 (K-18): sc-1149. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing cytoplasmic staining of cells in germinal and non-germinal centers (**B**).

## SELECT PRODUCT CITATIONS


1. Aoki, Y., et al. 1998. CsA-sensitive purine-box transcriptional regulator in bronchial epithelial cells contains NF45, NF90, and Ku. Am. J. Physiol. 275: L1164-L1172.
2. Lipskaia, L., et al. 2007. Mutation of δ-sarcoglycan is associated with $Ca^{2+}$-dependent vascular remodeling in the Syrian hamster. Am. J. Pathol. 171: 162-171.
3. Li, G.D., et al. 2008. CHP2 activates the calcineurin/nuclear factor of activated T cells signaling pathway and enhances the oncogenic potential of HEK293 cells. J. Biol. Chem. 283: 32660-32668.
4. Blomberg, K.E., et al. 2009. Transcriptional signatures of Itk-deficient $CD3^+$, $CD4^+$ and $CD8^+$ T-cells. BMC Genomics 10: 233.
5. Munkert, A., et al. 2009. Characterization of the transcriptional regulation of the human MT1-MMP gene and association of risk reduction for focal-segmental glomerulosclerosis with two functional promoter SNPs. Nephrol. Dial. Transplant. 24: 735-742.
6. 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.


## RESEARCH USE

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