Go-ChIP-Grade™ Purified anti-NFATc1 Antibody

Catalog# / Size	649607 / 25 µg 649608 / 100 µg
Clone	7A6
Regulatory Status	RUO
Other Names	Nuclear factor of activated T-cells, cytoplasmic 1, NFAT transcription complex cytosolic component, NFAT2, NFATc
Isotype	Mouse IgG1, κ
Description	The product of this gene is a component of the nuclear factor of activated T cells DNA-binding transcription complex. The protein complex consists of NFAT1, NFAT2 (NFATc1 or NFATc), NFAT3, and NFAT4. All members of this family are transcription factors with a Rel homology domain and regulate gene transcription in concert with AP-1 (Jun/Fos) to orchestrate an effective immune response. NFAT proteins are predominantly expressed in cells of the immune system but are also expressed in skeletal muscle, keratinocytes and adipocytes, regulating cell differentiation programs in these cells. In resting cells, NFAT proteins are heavily phosphorylated and localized in the cytoplasm. Increased intracellular calcium concentrations activate the calcium/calmodulin-dependent serine phosphatase calcineurin, which dephosphorylates NFAT proteins, resulting in their subsequent translocation to the nucleus. Proteins belonging to this family of transcription factors play a central role in inducible gene transcription during immune response. The product of this gene is an inducible nuclear component. It functions as a major molecular target for the immunosuppressive drugs such as cyclosporin A. Five transcript variants encoding distinct isoforms have been identified for this gene. Different isoforms of this protein may regulate inducible expression of different cytokine genes.

Product Details

Verified Reactivity	Human, Mouse, Rat
Antibody Type	Monoclonal
Host Species	Mouse
Immunogen	Recombinant protein of human NFATc1 amino acids 197-304.
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography.
Concentration	0.5 mg/ml
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C.
Application	ChIP - *Quality tested* WB - *Verified* ICC, ICFC - *Reported in the literature, not verified in house*
Recommended Usage	Each lot of this antibody is quality control tested by ChIP Assay. The suggested dilution for ChIP application is 1:100-1:2000 by volume. For Western blotting, the suggested use of this reagent is 1.0 µg per ml. It is recommended that the reagent to be titrated for optimal performance before each experiment.
Application Notes	25 µg, 100 µg of Go-ChIP-Grade™ Purified Antibody can be used for 4-50, 16-200 immunoprecipitations, respectively, at the recommended dilution. 7A6 antibody detects endogenous human NFATC1 in Western blot. There are 10 isoforms with a predicted MW of 39KD, 74kD, 76kD, 77kD (3), 88kD (2), 100kD, 101kD. With this antibody, observed MW bands range from 70 - 120 kD. The optimal concentration should be determined by titration for each individual assay of interest.
Application References	1. Timmerman LA, *et al.* 1997. *J. Immunol.* 159:2735. (IF)

(PubMed link indicates BioLegend citation)	2. Brandt C, *et al.* 2010. Cytometry A. 77:607. (FC) 3. Fan W, *et al.* 2012. *Arthritis Rheum.* 64:3715. PubMed
Product Citations	1. Zhong Y, *et al.* 2022. Nat Immunol. 23:122. PubMed
RRID	AB_2721595 (BioLegend Cat. No. 649607) AB_2721596 (BioLegend Cat. No. 649608)

Antigen Details

Structure	943 amino acids with predicted molecular weight of 101kD. There are 10 isoforms with a predicted MW of 39kD, 74kD, 76kD, 77kD (3), 88kD (2), 100kD, 101kD.
Distribution	Cytoplasm, Nucleus. NFATc1 is cytoplasmic in the phosphorylated form and nuclear after calcineurin-mediated dephosphorylation controlled activation.
Biology Area	Cell Biology, Immunology, Neuroscience, Neuroscience Cell Markers, Signal Transduction, Transcription Factors
Molecular Family	Nuclear Markers
Antigen References	1. Zhao Q, *et al.* 2010. *Int. J. Biochem. Cell Biol.* 42:576. 2. Hoey T, *et al.* 1995. *Immunity* 2:461. 3. Northrop JP, *et al.* 1993. *J. Biol. Chem.* 268:2917. 4. Hogan PG, *et al.* 2003. *Genes Dev.* 17:2205. 5. Shaw KT, *et al.* 1995. *P. Natl. Acad. Sci. USA* 92:11205. 6. Serfling E, *et al.* 2007. *Sci. STKE* 138:pe42.
Gene ID	4772

Related Protocols

BioLegend's Tools for Chromatin Immunoprecipitation (ChIP) Assays - Video

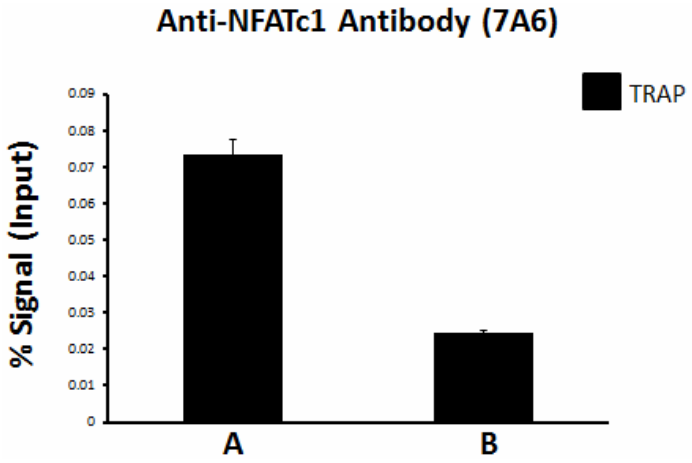
Chromatin Immunoprecipitation (ChIP) Assay Protocol

Western Blotting Protocol

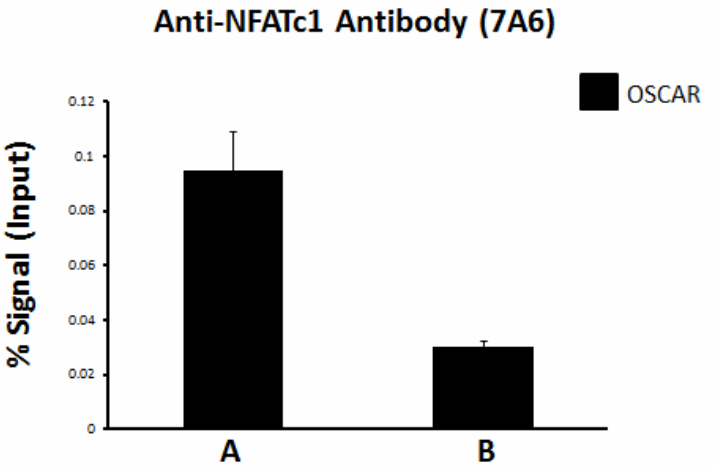
Other Formats

PE anti-NFATc1, Purified anti-NFATc1, Alexa Fluor® 488 anti-NFATc1, Go-ChIP-Grade™ Purified anti-NFATc1

Product Data



Chromatin Immunoprecipitation (ChIP) was performed using Go-ChIP-Grade™ Protein G Enzymatic kit by loading 3 µg of cross-linked chromatin samples from Raw264.7 cells treated with RANKL with either A) 1:500 dilution of Go-ChIP-Grade™ Purified anti-NFATc1 (Clone 7A6), or B) equal amount of Purified Mouse IgG1 Isotype Control Antibody. The enriched DNA was purified and quantified by real-time qPCR using primers targeting mouse TRAP gene region. The amount of immunoprecipitated DNA in each sample is represented as signal relative to the 5% of total amount of input chromatin.



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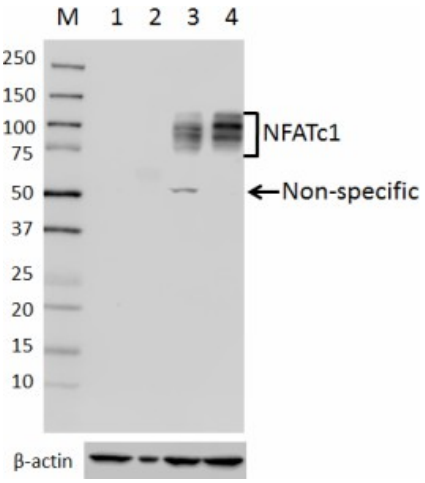

Total lysates (15 µg protein) from EL4 (lane 1), HeLa (lane 2), Jurkat (lane 3) and Raw264.7 (lane 4) cells were resolved by electrophoresis (4-20% Tris-Glycine gel), transferred to nitrocellulose, and probed with 1:500 diluted (1 µg/mL) Purified anti-NFATc1 Antibody, clone 7A6 (upper). Proteins were visualized by chemiluminescence detection using a 1:3000 diluted goat anti-mouse-IgG secondary antibody conjugated to HRP for the anti-NFATc1 Antibody. 7A6 antibody detects different endogenous human NFATc1 spicing variants with an observed molecular weight from 70 - 120 kD. 1:5000 diluted Direct-Blot HRP anti-β-Actin Antibody (2F1-1) was used as a loading control (lower). Lane M: Molecular weight ladder.

BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587