

Recombinant Rat NFAC3 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52177

Size: 10ug, 100ug

Protein Name: Nuclear factor of activated T-cells, cytoplasmic 3 (NFATc3) (NFATx) (T-cell transcription factor NFAT4)

Synonym: Nfatc3, Nfat4

UniProt ID: A0A0G2JTY4

UniProt Link: www.uniprot.org/uniprotkb/A0A0G2JTY4/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1076 AA

Molecular Weight: 116 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MTTANCGAHDELDFKLVFGEDGAPTVPVSQVSRPADLEPDDCASIIYIFNVDPPPSTLNSSLGLPHHGL
LQSHSSVLSPSFQLQGFKNYEGTDDISESKYSSLGPKPFECPSIQITSISPNCHEQETDAHEDDLHVN
DPEREYLERPSRDHLYLPLEPSYRESSLSPSPASSVSSRSWFSDASSCESLSHIYDDVDSELNEAAA
RFTLGSPLTSPGGSPGGCPGEESWHQQYGPGHSLSPRQSPCHSPRSSITDENWLSRPASGPSS
RPTSPCGKRRHSSAEVCYAGSLSPHHSPVPSPGHSPRGSVTEDTWLTAPVHTGSGLSPAPFPFQY
CVETDIPLKTRKTSDDQAAILPGKLEVCSDDQGSLSPSRETSVDDGLGSQYPLKKDSSGDQFLSVPS
PFTWSKPKPGHTPIFRTSSLPLDWLPLTHFGQCELKIEVQPKTHHRAHYETEGSRGAVKASTGGH
PVVKLLGYSEKPINLQMFIGHTADDRYLPHAFYQVHRITGKTVATASQEIIIASTKVLEIPLL PENNMSA
SIDCAGILKLRNSDIELRKGETDIGRKNTRVRLVFRVHIPQPSGKVLSQLIASIPVECSQRSQAELPHIE
KYSINSCSVNGGHEMIVTGSNFLPESKIIIFLEKGQDGRPHWEAEGKIIREKCGGHIVLEVPPYHNPA
VTSAVQVHFYLCNGKRKKSQSQRFTYTPVLMKQEQRDLDLSSVPSLPVPHSAQTQRPSSDTGHP
HDSALSAPRSLICPVQPAYASMITSTHLPQLQCRDEGAGKEQHIIIPSSVMHQPFQVTPTSPMGSSYQ
SIQTNMYNGPTCLPMNPASSQEFPVLFQQDAALSNLVNLGCQPLSPIPFHSSNSDATGHLLAHSPH
SVQTPPHLQSMGYHCSSAGQRSLSSPVAAQVTGQPSSHLQPIYCPSHPGSATAASPAASHALSSS
PISGPPSPQLQSMPLYQSPSSGTASSPSPVTRMHSGQHSTQAQSTGQGGLSVPSLVCHSLCDPAS
FPPGGAASIKPEPEDQEPNFATIGLQDITLDDVNEIIGRDMSQITVSQGPVEIRDAPLPGPESPDVMS
SNSAQ



3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Nuclear factor of activated T-cells, cytoplasmic 3 (NFATc3) (NFATx) (T-cell transcription factor NFAT4) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Acts as a regulator of transcriptional activation. Binds to the TNFSF11/RANKL promoter region and promotes TNFSF11 transcription (By similarity). Binding to the TNFSF11 promoter region is increased by high levels of Ca^{2+} which induce NFATC3 expression and may lead to regulation of TNFSF11 expression in osteoblasts (By similarity). Plays a role in promoting mesenteric arterial wall remodeling in response to the intermittent hypoxia-induced increase in EDN1 and ROCK signaling (By similarity). As a result NFATC3 colocalizes with F-actin filaments, translocates to the nucleus and promotes transcription of the smooth muscle hypertrophy and differentiation marker ACTA2 (By similarity). Promotes lipopolysaccharide-induced apoptosis and hypertrophy in cardiomyocytes (PubMed:30980393). Following JAK/STAT signaling activation and as part of a complex with NFATC4 and STAT3, binds to the alpha-beta E4 promoter region of CRYAB and activates transcription in cardiomyocytes (PubMed:19538478). In conjunction with NFATC4, involved in embryonic heart development via maintenance of cardiomyocyte survival, proliferation and differentiation (By similarity). Plays a role in the inducible expression of cytokine genes in T-cells, especially in the induction of the IL-2 (By similarity). Required for thymocyte maturation during DN3 to DN4 transition and during positive selection (By similarity). Positively regulates macrophage-derived polymicrobial clearance, via binding to the promoter region and promoting transcription of NOS2 resulting in subsequent generation of nitric oxide (By similarity). Involved in Ca^{2+} -mediated transcriptional responses upon Ca^{2+} influx via ORAI1 CRAC channels.

Subcellular Localization: Cytoplasm . Nucleus . Note=The subcellular localization of NFATC plays a key role in the regulation of gene transcription (By similarity). Rapid nuclear exit of NFATC is thought to be one mechanism by which cells distinguish between sustained and transient calcium signals (By similarity). Cytoplasmic when phosphorylated and nuclear after activation, that is controlled by calcineurin-mediated dephosphorylation (By similarity). Translocation to the nucleus is increased in the presence of calcium in pre-osteoblasts (By similarity). Translocates to the nucleus in the presence of EDN1 following colocalization with F-actin filaments, translocation is ROCK-dependent (PubMed:19538478). Translocates to the nucleus in response to lipopolysaccharide treatment of macrophages (By similarity).

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.



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- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.