

Recombinant Rat NFkB1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52498

Size: 10ug, 100ug

Protein Name: Nuclear factor NF-kappa-B p105 subunit (DNA-binding factor KBF1) (EBP-1) (Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1) [Cleaved into: Nuclear factor NF-kappa-B p50 subunit]

Synonym: Nfkb1

UniProt ID: Q63369

UniProt Link: www.uniprot.org/uniprotkb/Q63369/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 973 AA

Molecular Weight: 106 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MADDDPFGTGQMFHLNTALTHSIFNAELYSTDIPLSTADGPYLQILEQPKQGRGFRFRYVCEGPSHGG
LPGASSEKNKKSYPQVKICNYVGPAAKVVQLVTNGKNIHLHAHSLVGKHCEGICTVTAGPKDMVVG
FANLILHVTKKKVFETLEARMTEACIRGYNPGLLVHSDLAYLQAEGGGDRQLTDREKEIIRQAALQQ
TKEMDLSSVRLMFTAFLPDSTGSFTRRLEPVVSDAIYDSKAPNASNLKIVRMDRTAGCVTGGEIYLL
CDKVQKDDIQIRFYEEEEENGGVWEGFGDFSPTDVHRQFAIVFKTPKYKDVNITKPASVQVQLRRKSD
LETSEPKPFLYPEIKDKEEVQRKRQKLMPNFSDFSFGGSGAGAGGGGMFGSGGGGGGSGTSPG
PGYGFPHYGFPAAYGGIAFHGATKSNTGITHGTINTKFKNEPRDCAKSDDREILNPPEKETQGEGPS
LFMASTKTEAIAIPASTMEDKEEDVGFQDNLFLEKALQLAKRHANALFDYAVTGDVKMLLAVQRHLTA
VQDENGDSVLHLAIIHLHAQLVRDLLEVTSGSISDDIINMRNDLYQTPLHLAVITKQEDVVEDLLRVGA
DLSLLDRWGNLHLAAKEGHDKILGVLLKNSKAALLINHPNGEGLNAIHIAVMSNSLSCLQLLVAAG
AEVNAQEQKSGRTALHLAVEYDNISLAGCLLLEGDALVDSTTYDGTTPHLHIAAGRGSTRLAALLKAAG
ADPLVENFEPLYDLDDSWEKAGEDEGVVPGTTPDMAANWQVFDILNGKPYEPVFTSDDILPQGDIK
QLTEDTRLQLCKLLEIPDPDKNWATLAQKLGLGILNNAFRLSPAPSKTMDNYEVSGGTIKELVEALR
QMGYTEAIEVIAAFRTPETTASSPVTTAQAHLLPLSSSTRQHIDELRDNDSDVCDSGVETSFRKLSF
SESLTGDGPLLSLNKMPHNYGQDGPKEGKI



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 NF-kappa-B p105 subunit (DNA-binding factor KBF1) (EBP-1) (Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1) [Cleaved into: Nuclear factor NF-kappa-B p50 subunit] 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: NF-kappa-B is a pleiotropic transcription factor present in almost all cell types and is the endpoint of a series of signal transduction events that are initiated by a vast array of stimuli related to many biological processes such as inflammation, immunity, differentiation, cell growth, tumorigenesis and apoptosis. NF-kappa-B is a homo- or heterodimeric complex formed by the Rel-like domain-containing proteins RELA/p65, RELB, NFKB1/p105, NFKB1/p50, REL and NFKB2/p52 and the heterodimeric p65-p50 complex appears to be most abundant one. The dimers bind at kappa-B sites in the DNA of their target genes and the individual dimers have distinct preferences for different kappa-B sites that they can bind with distinguishable affinity and specificity. Different dimer combinations act as transcriptional activators or repressors, respectively. NF-kappa-B is controlled by various mechanisms of post-translational modification and subcellular compartmentalization as well as by interactions with other cofactors or corepressors. NF-kappa-B complexes are held in the cytoplasm in an inactive state complexed with members of the NF-kappa-B inhibitor (I-kappa-B) family. In a conventional activation pathway, I-kappa-B is phosphorylated by I-kappa-B kinases (IKKs) in response to different activators, subsequently degraded thus liberating the active NF-kappa-B complex which translocates to the nucleus. NF-kappa-B heterodimeric p65-p50 and RelB-p50 complexes are transcriptional activators. The NF-kappa-B p50-p50 homodimer is a transcriptional repressor, but can act as a transcriptional activator when associated with BCL3. NFKB1 appears to have dual functions such as cytoplasmic retention of attached NF-kappa-B proteins by p105 and generation of p50 by a cotranslational processing. The proteasome-mediated process ensures the production of both p50 and p105 and preserves their independent function, although processing of NFKB1/p105 also appears to occur post-translationally. p50 binds to the kappa-B consensus sequence 5'-GGRNNYYCC-3', located in the enhancer region of genes involved in immune response and acute phase reactions. In a complex with MAP3K8, NFKB1/p105 represses MAP3K8-induced MAPK signaling; active MAP3K8 is released by proteasome-dependent degradation of NFKB1/p105.; [Nuclear factor NF-kappa-B p105 subunit]: P105 is the precursor of the active p50 subunit (Nuclear factor NF-kappa-B p50 subunit) of the nuclear factor NF-kappa-B. Acts as a cytoplasmic retention of attached NF-kappa-B proteins by p105.; [Nuclear factor NF-kappa-B p50 subunit]: Constitutes the active form, which associates with RELA/p65 to form the NF-kappa-B p65-p50 complex to form a transcription factor. Together with RELA/p65, binds to the kappa-B consensus sequence 5'-GGRNNYYCC-3', located in the enhancer region of genes involved in immune response and acute phase reactions.

Subcellular Localization: [Nuclear factor NF-kappa-B p105 subunit]: Cytoplasm .; [Nuclear factor NF-kappa-B p50 subunit]: Nucleus . Cytoplasm . Note=Association with NFKBIA inhibitor (I-kappa-B), promotes its retention in the cytoplasm in an inactive form. Translocates into the nucleus following NFKBIA degradation.

6. Notes

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