

Product Name: NFκB-p105 Rabbit Polyclonal Antibody
Catalog #: APRab14667



Summary

Production Name	NFκB-p105 Rabbit Polyclonal Antibody
Description	Rabbit Polyclonal Antibody
Host	Rabbit
Application	IF,IHC,WB,
Reactivity	Human,Mouse

Performance

Conjugation	Unconjugated
Modification	Unmodified
Isotype	IgG
Clonality	Polyclonal
Form	Liquid
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.
Buffer	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% New type preservative N.
Purification	Affinity purification

Immunogen

Gene Name	NFKB1
Alternative Names	NFKB1; 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
Gene ID	4790.0
SwissProt ID	P19838.The antiserum was produced against synthesized peptide derived from human NF-kappaB p105/p50. AA range:896-945

Application

Dilution Ratio	WB 1:500 - 1:2000 IHC 1:100 - 1:300. IF 1:200 - 1:1000. ELISA: 1:40000. Not yet tested in other applications.
Molecular Weight	105kD

Background

nuclear factor kappa B subunit 1(NFKB1) Homo sapiens This gene encodes a 105 kD protein which can undergo cotranslational processing by the 26S proteasome to produce a 50 kD protein. The 105 kD protein is a Rel protein-specific transcription inhibitor and the 50 kD protein is a DNA binding subunit of the NF-kappa-B (NFKB) protein complex. NFKB is a transcription regulator that is activated by various intra- and extra-cellular stimuli such as cytokines, oxidant-free radicals, ultraviolet irradiation, and bacterial or viral products. Activated NFKB translocates into the nucleus and stimulates the expression of genes involved in a wide variety of biological functions. Inappropriate activation of NFKB has been associated with a number of inflammatory diseases while persistent inhibition of NFKB leads to inappropriate immune cell development or delayed cell growth. Alternative splicing results in multiple transcript variants encoding different isoforms. Glycine-rich region (GRR) appears to be a critical element in the generation of p50. The C-terminus of p105 might be involved in cytoplasmic retention, inhibition of DNA-binding, and transcription activation. NF-kappa-B is a pleiotropic transcription factor which is present in almost all cell types and is involved in 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'-GGRNYYCC-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. Induction: By phorbol ester and TNF-alpha. PTM: Phosphorylation at 'Ser-903' and 'Ser-907' primes p105 for proteolytic processing in response to TNF-alpha stimulation. Phosphorylation at 'Ser-927' and 'Ser-932' are required for BTRC/BTRCP-mediated proteolysis. PTM: Polyubiquitination seems to allow p105 processing. PTM: S-nitrosylation of Cys-61 affects DNA binding. PTM: While translation occurs, the particular unfolded structure after the GRR repeat promotes the generation of p50 making it an acceptable substrate for the proteasome. This process is known as cotranslational processing. The

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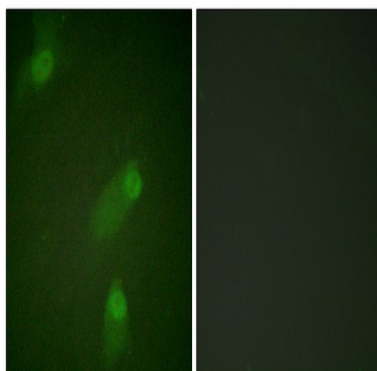


processed form is active and the unprocessed form acts as an inhibitor (I kappa B-like), being able to form cytosolic complexes with NF-kappa B, trapping it in the cytoplasm. Complete folding of the region downstream of the GRR repeat precludes processing.,similarity:Contains 1 death domain.,similarity:Contains 1 RHD (Rel-like) domain.,similarity:Contains 7 ANK repeats.,subcellular location:Nuclear, but also found in the cytoplasm in an inactive form complexed to an inhibitor (I-kappa-B),subunit:Component of the NF-kappa-B p65-p50 complex. Component of the NF-kappa-B p65-p50 complex. Homodimer; component of the NF-kappa-B p50-p50 complex. Component of the NF-kappa-B p105-p50 complex. Component of the NF-kappa-B p50-c-Rel complex. Component of a complex consisting of the NF-kappa-B p50-p50 homodimer and BCL3. Also interacts with MAP3K8. NF-kappa-B p50 subunit interacts with NCOA3 coactivator, which may coactivate NF-kappa-B dependent expression via its histone acetyltransferase activity. Interacts with DSIPI; this interaction prevents nuclear translocation and DNA-binding. Interacts with SPAG9 and UNC5CL. NFKB1/p105 interacts with CFLAR; the interaction inhibits p105 processing into p50. NFKB1/p105 forms a ternary complex with MAP3K8 and TNIP2. Interacts with GSK3B; the interaction prevents processing of p105 to p50. NFKB1/p50 interacts with NFKBIE. NFKB1/p50 interacts with NFKBIZ. Nuclear factor NF-kappa-B p50 subunit interacts with NFKBID.,

Research Area

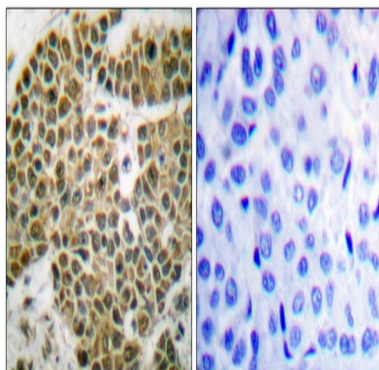
T_Cell_Receptor; B_Cell_Antigen; Stem cell pathway; Toll_Like; MAPK_ERK_Growth;MAPK_G_Protein; PI3K/Akt; Protein_Acetylation

Image Data



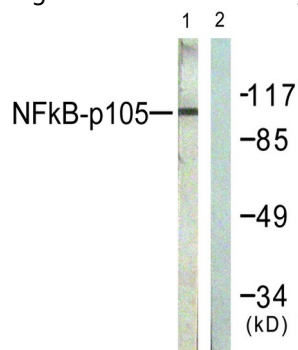
Immunofluorescence analysis of HeLa cells, using NF-kappaB p105/p50 Antibody. The picture on the right is blocked with the synthesized peptide.

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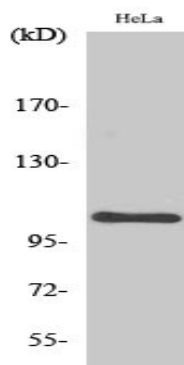
Immunohistochemistry analysis of paraffin-embedded human breast carcinoma tissue, using NF-kappaB p105/p50 Antibody.

The picture on the right is blocked with the synthesized peptide.



Western blot analysis of lysates from HeLa cells, treated with TNF-α 20ng/ml 5', using NF-kappaB p105/p50 Antibody. The

lane on the right is blocked with the synthesized peptide.



Western Blot analysis of various cells using NFκB-p105 Polyclonal Antibody

Note

For research use only.