

# Ku70 Antibody

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP51617

## Product Information

Application	WB
Primary Accession	<a href="#">P12956</a>
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	69843

## Additional Information

Gene ID	2547
Other Names	X-ray repair cross-complementing protein 6, 364-, 4299-, 5'-deoxyribose-5-phosphate lyase Ku70, 5'-dRP lyase Ku70, 70 kDa subunit of Ku antigen, ATP-dependent DNA helicase 2 subunit 1, ATP-dependent DNA helicase II 70 kDa subunit, CTC box-binding factor 75 kDa subunit, CTC75, CTCBF, DNA repair protein XRCC6, Lupus Ku autoantigen protein p70, Ku70, Thyroid-lupus autoantigen, TLAA, X-ray repair complementing defective repair in Chinese hamster cells 6, XRCC6, G22P1
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the N-term region of human Ku70. The exact sequence is proprietary.
Dilution	WB~~ 1:1000
Format	0.01M PBS, pH 7.2, 0.09% (W/V) Sodium azide, Glycerol 50%
Storage	Store at -20 °C.Stable for 12 months from date of receipt

## Protein Information

Name	XRCC6 ( <a href="#">HGNC:4055</a> )
Synonyms	G22P1
Function	DNA-binding protein critical for the DNA damage response, specifically in repairing double-strand breaks (DSBs) via the classical non-homologous end joining (NHEJ) pathway. It forms a heterodimer with XRCC5 (Ku80), creating the Ku70:Ku80 heterodimer (Ku complex), which serves as a DNA end-binding complex. It primarily binds DSBs and recruits essential repair factors, assembling the core long-range NHEJ complex to facilitate the alignment and ligation of broken DNA ends (PubMed: <a href="#">11493912</a> , PubMed: <a href="#">20493174</a> , PubMed: <a href="#">33854234</a> , PubMed: <a href="#">34352203</a> , PubMed: <a href="#">9742108</a> ). This pathway

ensures the rapid repair of cytotoxic and mutagenic DSBs and contributes to the generation of diversity in T-cell receptors and antibodies through mechanisms such as V(D)J recombination (PubMed:[9742108](#)). Likely acts as a 5'-deoxyribose-5-phosphate lyase (5'-dRP lyase), catalyzing the beta-elimination of the 5'-deoxyribose- 5-phosphate at abasic sites near DSBs. This activity cleans the termini of abasic sites, a common form of nucleotide damage, preparing broken ends for ligation (PubMed:[20383123](#)). It may also possess 3'-5' DNA helicase activity, although this has not been confirmed in vivo, and its physiological significance remains unclear (PubMed:[7957065](#)). Beyond DNA repair, the protein contributes to telomere maintenance (PubMed:[29490055](#)). It is also implicated in transcriptional regulation, acting as a cofactor for various transcription factors (PubMed:[12145306](#), PubMed:[8621488](#)). It plays a role in the regulation of DNA virus-mediated innate immune response by assembling into the HDP- RNP complex, a complex that serves as a platform for IRF3 phosphorylation and subsequent innate immune response activation through the cGAS-STING pathway (PubMed:[28712728](#)). Can also bind RNAs and recruits PRKDC to a wide range of cellular RNAs, including the U3 small nucleolar RNA, playing a role in the biogenesis of ribosomal RNAs (PubMed:[32103174](#)). Additionally, it negatively regulates apoptosis by interacting with BAX, sequestering it from the mitochondria, and may possess deubiquitination activity targeting BAX (PubMed:[15023334](#), PubMed:[18362350](#), PubMed:[35545041](#)).

#### Cellular Location

Nucleus. Chromosome. Cytoplasm. Note=When trimethylated, localizes in the cytoplasm.

## Background

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Single-stranded DNA-dependent ATP-dependent helicase. Has a role in chromosome translocation. The DNA helicase II complex binds preferentially to fork-like ends of double-stranded DNA in a cell cycle-dependent manner. It works in the 3'-5' direction. Binding to DNA may be mediated by XRCC6. Involved in DNA non-homologous end joining (NHEJ) required for double-strand break repair and V(D)J recombination. The XRCC5/6 dimer acts as regulatory subunit of the DNA-dependent protein kinase complex DNA-PK by increasing the affinity of the catalytic subunit PRKDC to DNA by 100-fold. The XRCC5/6 dimer is probably involved in stabilizing broken DNA ends and bringing them together. The assembly of the DNA-PK complex to DNA ends is required for the NHEJ ligation step. Required for osteocalcin gene expression. Probably also acts as a 5'-deoxyribose-5-phosphate lyase (5'-dRP lyase), by catalyzing the beta-elimination of the 5' deoxyribose- 5-phosphate at an abasic site near double-strand breaks. 5'-dRP lyase activity allows to 'clean' the termini of abasic sites, a class of nucleotide damage commonly associated with strand breaks, before such broken ends can be joined. The XRCC5/6 dimer together with APEX1 acts as a negative regulator of transcription.

## References

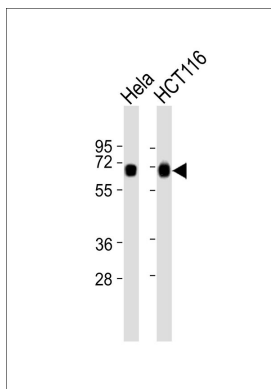
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 Reeves W.H.,et al.J. Biol. Chem. 264:5047-5052(1989).  
 Griffith A.J.,et al.Mol. Biol. Rep. 16:91-97(1992).  
 Halleck A.,et al.Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.  
 Dunham I.,et al.Nature 402:489-495(1999).

## Images

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All lanes : Anti-Ku70 Antibody at 1:1000 dilution Lane 1:  
 Hela whole cell lysates Lane 2: HCT116 whole cell lysates  
 Lysates/proteins at 20 µg per lane. Secondary Goat



Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution Predicted band size : 70 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

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