

# Ku70 Antibody

Purified Mouse Monoclonal Antibody (Mab)  
Catalog # AP52822

## Product Information

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<b>Application</b>	WB, ICC, IP
<b>Primary Accession</b>	<a href="#">P12956</a>
<b>Reactivity</b>	Human
<b>Host</b>	Mouse
<b>Clonality</b>	Monoclonal
<b>Isotype</b>	IgG1
<b>Calculated MW</b>	69843

## Additional Information

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<b>Gene ID</b>	2547
<b>Other Names</b>	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;ATP-dependent DNA helicase 2 subunit 1;ATP-dependent DNA helicase II 70 kDa subunit;CTC box binding factor 75 kDa subunit;CTC box-binding factor 75 kDa subunit;CTC75;CTCBF;CTCBF; DNA repair protein XRCC6;G22P1;Ku 70;Ku autoantigen 70kDa;Ku autoantigen p70 subunit;Ku autoantigen, 70kDa;Ku p70;Ku70;Ku70 DNA binding component of DNA-dependent proteinkinase complex (thyroid autoantigen 70 kDa;Kup70;Lupus Ku autoantigen protein p70;ML8;Thyroid autoantigen 70kD (Ku antigen);Thyroid autoantigen;Thyroid lupus autoantigen;Thyroid lupus autoantigen;Thyroid lupus autoantigen p70;Thyroid-lupus autoantigen;TLAA;TLAA;X ray repair complementing defective repair in Chinese hamster cells 6;X-ray repair complementing defective repair in Chinese hamster cells 6;X-ray repair cross-complementing protein 6;XRCC 6;XRCC6;XRCC6_HUMAN.
<b>Dilution</b>	WB~~1:1000 ICC~~1:200 IP~~1:500
<b>Format</b>	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide, pH 7.3.
<b>Storage</b>	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

## Protein Information

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<b>Name</b>	XRCC6 ( <a href="#">HGNC:4055</a> )
<b>Synonyms</b>	G22P1

<b>Function</b>	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: <a href="#">9742108</a> ). 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: <a href="#">20383123</a> ). It may also possess 3'-5' DNA helicase activity, although this has not been confirmed in vivo, and its physiological significance remains unclear (PubMed: <a href="#">7957065</a> ). Beyond DNA repair, the protein contributes to telomere maintenance (PubMed: <a href="#">29490055</a> ). It is also implicated in transcriptional regulation, acting as a cofactor for various transcription factors (PubMed: <a href="#">12145306</a> , PubMed: <a href="#">8621488</a> ). 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: <a href="#">28712728</a> ). 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: <a href="#">32103174</a> ). Additionally, it negatively regulates apoptosis by interacting with BAX, sequestering it from the mitochondria, and may possess deubiquitination activity targeting BAX (PubMed: <a href="#">15023334</a> , PubMed: <a href="#">18362350</a> , PubMed: <a href="#">35545041</a> ).
<b>Cellular Location</b>	Nucleus. Chromosome. Cytoplasm. Note=When trimethylated, localizes in the cytoplasm.

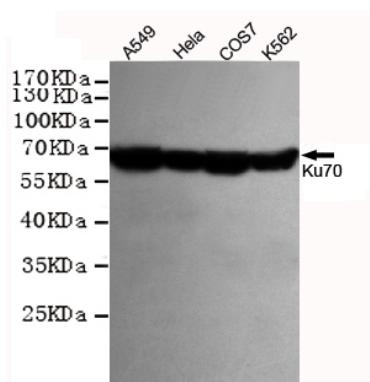
## Background

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.

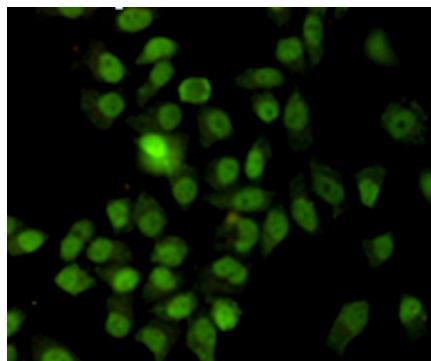
## References

Chan J.Y.,et al.J. Biol. Chem. 264:3651-3654(1989).  
 Reeves W.H.,et al.J. Biol. Chem. 264:5047-5052(1989).  
 Griffith A.J.,et al.Mol. Biol. Rep. 16:91-97(1992).  
 Ota T.,et al.Nat. Genet. 36:40-45(2004).  
 Halleck A.,et al.Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.

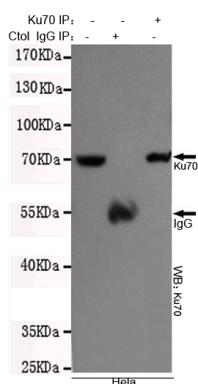
## Images



Western blot detection of Ku70 in Hela,A549,COS7 and K562 cell lysates using Ku70 mouse mAb (1:1000 diluted).Predicted band size:70KDa. Observed band size:67KDa.



Immunocytochemistry staining of HeLa cells fixed with -20°C Methanol and using anti-Ku70 antibody (dilution 1:200).



Immunoprecipitation analysis of Hela cell lysates using Ku70 mouse mAb.

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