

Rabbit Ku80 Polyclonal Antibody | anti-XRCC5 antibody

Ku80 Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA320844	Rabbit	Human, Monkey	ELISA, Immunocytochemistry, Immunofluorescence, Immunohistochemistry, Western Blot

PRODUCT SYNONYMS

Ku80; Polyclonal Antibody; Ku80 Antibody; 86 kDa subunit of Ku antigen; ATP dependent DNA helicase 2 subunit 2; ATP dependent DNA helicase II 80 kDa subunit; ATP dependent DNA helicase II 86 Kd subunit; ATP dependent DNA helicase II; ATP-dependent DNA helicase 2 subunit 2; ATP-dependent DNA helicase II 80 kDa subunit; CTC box binding factor 85 kDa; CTC box-binding factor 85 kDa subunit; CTC85; CTCBF; DNA repair protein XRCC5; KARP 1; KARP1; Ku 80; Ku autoantigen 80kDa; Ku86; Ku86 autoantigen related protein 1; KUB 2; KUB2; Lupus Ku autoantigen protein p86; NFIV; Nuclear factor IV; Thyroid lupus autoantigen; Thyroid-lupus autoantigen; TLAA; X ray repair complementing defective repair in Chinese hamster cells 5 (double strand break rejoining); X-ray repair complementing defective repair in Chinese hamster cells 5 (double-strand-break rejoining); X-ray repair cross-complementing protein 5; Xray repair complementing defective repair in Chinese hamster cells 5; XRCC 5; XRCC5; XRCC5_HUMAN; anti-XRCC5 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Monkey
Clonality	Polyclonal
Isotype	IgG
Specificity	Ku80 antibody detects endogenous levels of total Ku80
Purity/Purification	The antiserum was purified by peptide affinity chromatography using SulfoLink Coupling Resin.
Form/Format	Liquid Phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Sequence Length	732
Applicable Applications for anti-XRCC5 antibody	ELISA, ICC (Immunocytochemistry), IF (Immunofluorescence), IHC (Immunohistochemistry), WB (Western Blot)
Immunogen	A synthesized peptide derived from human Ku80
Subcellular Location	Nucleus. Chromosome.
Tissue Specificity	Expression increases during promyelocyte differentiation.
Conjugation	Unconjugated
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.



IHC (Immunohistochemistry)

AAA320844 at 1/100 staining human colon carcinoma tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary.



WB (Western Blot)

Western blot analysis on COS7 cell lysate using Ku80 Antibody. The lane on the left is treated with the antigen-specific peptide.



IF (Immunofluorescence)

AAA320844 staining HeLa cells by IF/ICC. The sample were fixed with PFA and permeabilized in 0.1% Triton X-100, then blocked in 10% serum for 45 minutes at 25 degree C. The primary antibody was diluted at 1/200 and incubated with the sample for 1 hour at 37 degree C. An Alexa Fluor 594 conjugated goat anti-rabbit IgG (H+L) antibody, diluted at 1/600, was used as secondary antibody.



IF (Immunofluorescence)

AAA320844 staining COS7 by IF/ICC. The sample were fixed with PFA and permeabilized in 0.1% Triton X-100, then blocked in 10% serum for 45 minutes at 25 degree C. The primary antibody was diluted at 1/200 and incubated with the sample for 1 hour at 37 degree C. An Alexa Fluor 594 conjugated goat anti-rabbit IgG (H+L) Ab, diluted at 1/600, was used as the secondary antibody.

ADDITIONAL INFORMATION

Related Product Information for anti-XRCC5 antibody	Description: Ku80 the 80-kilodalton subunit of the Ku complex, also known as ATP-dependant DNA helicase II. A single stranded DNA-dependent ATP-dependent helicase. It functions together with the DNA ligase IV-XRCC4 complex in the repair of DNA double-strand break by non-homologous end joining and the completion of V(D)J recombination events. Function: 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 (PubMed:12145306, PubMed:20383123, PubMed:7957065, PubMed:8621488). The assembly of the DNA-PK complex to DNA ends is required for the NHEJ ligation step. In association with NAA15, the XRCC5/6 dimer binds to the osteocalcin promoter and activates osteocalcin expression (PubMed:20383123). The XRCC5/6 dimer 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. XRCC5 probably acts as the catalytic subunit of 5'-dRP activity, and 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 (PubMed:8621488). 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. Subunit Structure: Heterodimer composed of XRCC5/Ku80 and XRCC6/Ku70. The dimer associates in a DNA-dependent manner with PRKDC to form the DNA-dependent protein kinase complex DNA-PK, and with the LIG4-XRCC4 complex to form the core of the non-homologous end joining (NHEJ) complex (PubMed:25941166, PubMed:25670504, PubMed:11493912, PubMed:22442688). Additional components of the NHEJ complex include NHEJ1/XLF and PAXX (PubMed:25574025, PubMed:25941166, PubMed:25670504). The dimer also associates with NAA15, and this complex displays DNA binding activity towards the osteocalcin FGF response element (OCFRE) (PubMed:12145306). In addition, XRCC5 binds to the osteoblast-specific transcription factors MSX2 and RUNX2 (PubMed:12145306). Interacts with ELF3 (PubMed:15075319). May interact with APLF (PubMed:17353262, PubMed:17396150). The XRCC5/XRCC6 dimer associates in a DNA-dependent manner with APEX1 (PubMed:8621488). Identified in a complex with DEAF1 and XRCC6. Interacts with NR4A3; the DNA-dependent protein kinase complex DNA-PK phosphorylates and activates NR4A3 and prevents NR4A3 ubiquitinylation and degradation (PubMed:25852083). Interacts with RNF138 (PubMed:26502055). Interacts with C7orf49/CYREN isoform 1 (CYREN-1) and isoform 4 (CYREN-2) (PubMed:24610814, PubMed:28959974). Interacts (via N-terminus) with HSF1 (via N-terminus); this interaction is direct and prevents XRCC5/XRCC6 heterodimeric binding and non-homologous end joining (NHEJ) repair activities induced by ionizing radiation (IR) (PubMed:26359349). Interacts with DHX9; this interaction occurs in a RNA-dependent manner (PubMed:14704337). Part of the HDP-RNP complex composed of at least HEXIM1, PRKDC, XRCC5, XRCC6, paraspeckle proteins (SFPQ, NONO, PSPC1, RBM14, and MATR3) and NEAT1 RNA (PubMed:28712728). Post-translational Modifications: Phosphorylated on serine residues. Phosphorylation by PRKDC may enhance helicase activity. Sumoylated. Ubiquitinated by RNF8 via 'Lys-48'-linked ubiquitination following DNA damage, leading to its degradation and removal from DNA damage sites (PubMed:22266820). Ubiquitinated by RNF138, leading to remove the Ku complex from DNA breaks (PubMed:26502055). Similarity: The EEXXXDDL motif is required for the interaction with catalytic subunit PRKDC and its recruitment to sites of DNA damage. Belongs to the ku80 family.
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NCBI AND UNIPROT INFORMATION

NCBI GI #	10863945
NCBI GeneID	7520
NCBI Accession #	NP_066964.1
NCBI GenBank Nucleotide #	NM_021141.3
UniProt Accession #	P13010; Q0Z7V0; Q4VBQ5; Q53HH7; Q7M4N0; Q9UCQ0; Q9UCQ1; A8K3X5
Molecular Weight	Observed: 70 kDa; 82 kDa Predicted: 83 kDa
NCBI Official Full Name	X-ray repair cross-complementing protein 5

NCBI Official Synonym Full Names	X-ray repair cross complementing 5
NCBI Official Symbol	XRCC5
NCBI Official Synonym Symbols	KU80; KUB2; Ku86; NFIV; KARP1; KARP-1
NCBI Protein Information	X-ray repair cross-complementing protein 5
UniProt Protein Name	X-ray repair cross-complementing protein 5
UniProt Gene Name	XRCC5
UniProt Synonym Gene Names	G22P2; CTC85; CTCBF; TLAA

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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