

Product Name: Ku80 (17A1) Rabbit Monoclonal Antibody
Catalog #: AMRe13156

Summary

Production Name	Ku80 (17A1) Rabbit Monoclonal Antibody
Description	Rabbit Monoclonal Antibody
Host	Rabbit
Application	WB
Reactivity	Human

Performance

Conjugation	Unconjugated
Modification	Unmodified
Isotype	IgG
Clonality	Monoclonal
Form	Liquid
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.
Buffer	Supplied in 50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% New type preservative N and 0.05% BSA.
Purification	Affinity purification

Immunogen

Gene Name	XRCC5 CTC box-binding factor 85 kDa subunit; CTC85; CTCBF; DNA repair protein XRCC5;
Alternative Names	G22P2; KARP1; Ku autoantigen, 80kDa; Ku80; Ku86 autoantigen related protein 1; KUB2; NFIV;
Gene ID	7520.0
SwissProt ID	P13010.A synthetic peptide of human Ku80

Application

Dilution Ratio	WB: 1:1000
Molecular Weight	83kDa

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Background

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. Single-stranded DNA-dependent ATP-dependent helicase that plays a key role in DNA non-homologous end joining (NHEJ) by recruiting DNA-PK to DNA (PubMed: [7957065](http://www.uniprot.org/citations/7957065)), PubMed: [8621488](http://www.uniprot.org/citations/8621488), PubMed: [12145306](http://www.uniprot.org/citations/12145306), PubMed: [11493912](http://www.uniprot.org/citations/11493912)). Required for double-strand break repair and V(D)J recombination (PubMed: [7957065](http://www.uniprot.org/citations/7957065), PubMed: [8621488](http://www.uniprot.org/citations/8621488), PubMed: [12145306](http://www.uniprot.org/citations/12145306), PubMed: [11493912](http://www.uniprot.org/citations/11493912)). Also has a role in chromosome translocation (PubMed: [7957065](http://www.uniprot.org/citations/7957065), PubMed: [8621488](http://www.uniprot.org/citations/8621488), PubMed: [12145306](http://www.uniprot.org/citations/12145306), PubMed: [11493912](http://www.uniprot.org/citations/11493912)). The DNA helicase II complex binds preferentially to fork-like ends of double-stranded DNA in a cell cycle-dependent manner (PubMed: [7957065](http://www.uniprot.org/citations/7957065), PubMed: [8621488](http://www.uniprot.org/citations/8621488), PubMed: [12145306](http://www.uniprot.org/citations/12145306), PubMed: [11493912](http://www.uniprot.org/citations/11493912)). It works in the 3'-5' direction (PubMed: [7957065](http://www.uniprot.org/citations/7957065), PubMed: [8621488](http://www.uniprot.org/citations/8621488), PubMed: [12145306](http://www.uniprot.org/citations/12145306), PubMed: [11493912](http://www.uniprot.org/citations/11493912)). During NHEJ, the XRCC5-XRCC6 dimer performs the recognition step: it recognizes and binds to the broken ends of the DNA and protects them from further resection (PubMed: [7957065](http://www.uniprot.org/citations/7957065), PubMed: [8621488](http://www.uniprot.org/citations/8621488), PubMed: [12145306](http://www.uniprot.org/citations/12145306), PubMed: [11493912](http://www.uniprot.org/citations/11493912)). Binding to DNA may be mediated by XRCC6 (PubMed: [7957065](http://www.uniprot.org/citations/7957065), PubMed: [8621488](http://www.uniprot.org/citations/8621488)).

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[12145306](http://www.uniprot.org/citations/12145306) PubMed: [11493912](http://www.uniprot.org/citations/11493912)). The XRCC5-XRRC6 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 (PubMed: [7957065](http://www.uniprot.org/citations/7957065) PubMed: [8621488](http://www.uniprot.org/citations/8621488) PubMed: [12145306](http://www.uniprot.org/citations/12145306) PubMed: [20383123](http://www.uniprot.org/citations/20383123) PubMed: [11493912](http://www.uniprot.org/citations/11493912)). The XRCC5-XRRC6 dimer is probably involved in stabilizing broken DNA ends and bringing them together (PubMed: [7957065](http://www.uniprot.org/citations/7957065) PubMed: [8621488](http://www.uniprot.org/citations/8621488) PubMed: [12145306](http://www.uniprot.org/citations/12145306) PubMed: [20383123](http://www.uniprot.org/citations/20383123)). The assembly of the DNA-PK complex to DNA ends is required for the NHEJ ligation step (PubMed: [7957065](http://www.uniprot.org/citations/7957065) PubMed: [8621488](http://www.uniprot.org/citations/8621488) PubMed: [12145306](http://www.uniprot.org/citations/12145306) PubMed: [20383123](http://www.uniprot.org/citations/20383123)). The XRCC5-XRRC6 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 (PubMed: [20383123](http://www.uniprot.org/citations/20383123)). 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 (PubMed: [20383123](http://www.uniprot.org/citations/20383123)). The XRCC5- XRRC6 dimer together with APEX1 acts as a negative regulator of transcription (PubMed: [8621488](http://www.uniprot.org/citations/8621488)). In association with NAA15, the XRCC5- XRRC6 dimer binds to the osteocalcin promoter and activates osteocalcin expression (PubMed: [12145306](http://www.uniprot.org/citations/12145306)). As part of the DNA-PK complex, involved in the early steps of ribosome assembly by promoting the processing of precursor rRNA into mature 18S rRNA in the small-subunit processome (PubMed: [32103174](http://www.uniprot.org/citations/32103174)). Binding to U3 small nucleolar RNA, recruits PRKDC and XRCC5/Ku86 to the small-subunit processome (PubMed: [32103174](http://www.uniprot.org/citations/32103174)). 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](http://www.uniprot.org/citations/28712728)).

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Research Area

Image Data



Western blot analysis of extracts from HeLa cells using RM4615 at 1:1000.

Note

For research use only.