

**Ku-80 Polyclonal Antibody**  
Catalog # AP70684**Specification****Ku-80 Polyclonal Antibody - Product Information**

Application	WB
Primary Accession	<a href="#">P13010</a>
Reactivity	Human, Monkey
Host	Rabbit
Clonality	Polyclonal

**Ku-80 Polyclonal Antibody - Additional Information****Gene ID** 7520**Other Names**

XRCC5; G22P2; X-ray repair cross-complementing protein 5; 86 kDa subunit of Ku antigen; ATP-dependent DNA helicase 2 subunit 2; ATP-dependent DNA helicase II 80 kDa subunit; CTC box-binding factor 85 kDa subunit; CTC85; CTCBF; DNA repair pr

**Dilution**

WB~Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. Immunofluorescence: 1/200 - 1/1000. ELISA: 1/20000. Not yet tested in other applications.

**Format**

Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.

**Storage Conditions**

-20°C

**Ku-80 Polyclonal Antibody - Protein Information****Name** XRCC5**Synonyms** G22P2**Function**

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: [11493912](http://www.uniprot.org/citations/11493912), PubMed: [12145306](http://www.uniprot.org/citations/12145306), PubMed: [7957065](http://www.uniprot.org/citations/7957065), PubMed: [8621488](http://www.uniprot.org/citations/8621488)). Required for double-strand break repair and V(D)J recombination (PubMed: [11493912](http://www.uniprot.org/citations/11493912), PubMed: [12145306](http://www.uniprot.org/citations/12145306), PubMed: [7957065](http://www.uniprot.org/citations/7957065), PubMed: [8621488](http://www.uniprot.org/citations/8621488)). Also has a role

in chromosome translocation (PubMed: <a href="http://www.uniprot.org/citations/11493912" target="\_blank">11493912</a>, PubMed: <a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed: <a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed: <a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>). The DNA helicase II complex binds preferentially to fork-like ends of double-stranded DNA in a cell cycle-dependent manner (PubMed: <a href="http://www.uniprot.org/citations/11493912" target="\_blank">11493912</a>, PubMed: <a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed: <a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed: <a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>). It works in the 3'-5' direction (PubMed: <a href="http://www.uniprot.org/citations/11493912" target="\_blank">11493912</a>, PubMed: <a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed: <a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed: <a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>). During NHEJ, the XRCC5-XRRC6 dimer performs the recognition step: it recognizes and binds to the broken ends of the DNA and protects them from further resection (PubMed: <a href="http://www.uniprot.org/citations/11493912" target="\_blank">11493912</a>, PubMed: <a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed: <a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed: <a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>). Binding to DNA may be mediated by XRCC6 (PubMed: <a href="http://www.uniprot.org/citations/11493912" target="\_blank">11493912</a>, PubMed: <a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed: <a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed: <a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>). The XRCC5-XRRC6 dimer acts as a 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: <a href="http://www.uniprot.org/citations/11493912" target="\_blank">11493912</a>, PubMed: <a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed: <a href="http://www.uniprot.org/citations/20383123" target="\_blank">20383123</a>, PubMed: <a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed: <a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>). The XRCC5-XRRC6 dimer is probably involved in stabilizing broken DNA ends and bringing them together (PubMed: <a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed: <a href="http://www.uniprot.org/citations/20383123" target="\_blank">20383123</a>, PubMed: <a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed: <a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>). The assembly of the DNA-PK complex to DNA ends is required for the NHEJ ligation step (PubMed: <a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>, PubMed: <a href="http://www.uniprot.org/citations/20383123" target="\_blank">20383123</a>, PubMed: <a href="http://www.uniprot.org/citations/7957065" target="\_blank">7957065</a>, PubMed: <a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>). 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: <a href="http://www.uniprot.org/citations/20383123" target="\_blank">20383123</a>). 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: <a href="http://www.uniprot.org/citations/20383123" target="\_blank">20383123</a>). The XRCC5-XRRC6 dimer together with APEX1 acts as a negative regulator of transcription (PubMed: <a href="http://www.uniprot.org/citations/8621488" target="\_blank">8621488</a>). In association with NAA15, the XRCC5-XRRC6 dimer binds to the osteocalcin promoter and activates osteocalcin expression (PubMed: <a href="http://www.uniprot.org/citations/12145306" target="\_blank">12145306</a>). 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: <a href="http://www.uniprot.org/citations/32103174" target="\_blank">32103174</a>). Binding to

U3 small nucleolar RNA, recruits PRKDC and XRCC5/Ku86 to the small-subunit processome (PubMed:<a href="http://www.uniprot.org/citations/32103174" target="\_blank">32103174</a>). 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="http://www.uniprot.org/citations/28712728" target="\_blank">28712728</a>).

#### Cellular Location

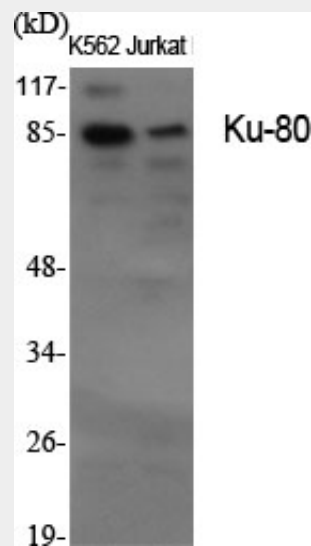
Nucleus. Nucleus, nucleolus. Chromosome

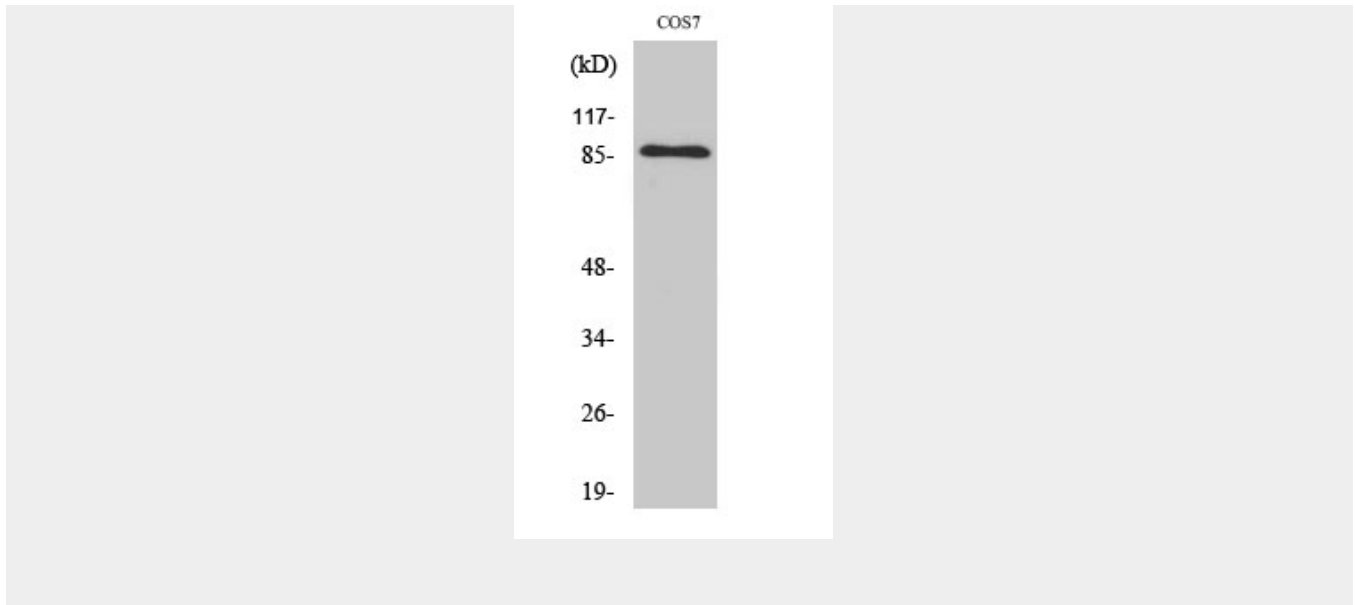
#### Ku-80 Polyclonal Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

#### Ku-80 Polyclonal Antibody - Images





### Ku-80 Polyclonal Antibody - 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 (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.