

**Anti-Ku80 Picoband Antibody**  
Catalog # ABO12153**Specification****Anti-Ku80 Picoband Antibody - Product Information**

Application	WB, IHC
Primary Accession	<a href="#">P13010</a>
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

**Description**

Rabbit IgG polyclonal antibody for X-ray repair cross-complementing protein 5(XRCC5) detection. Tested with WB, IHC-P in Human;Mouse;Rat.

**Reconstitution**

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

**Anti-Ku80 Picoband Antibody - Additional Information**

**Gene ID** 7520

**Other Names**

X-ray repair cross-complementing protein 5, 3.6.4.-, 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 protein XRCC5, Ku80, Ku86, Lupus Ku autoantigen protein p86, Nuclear factor IV, Thyroid-lupus autoantigen, TLAA, X-ray repair complementing defective repair in Chinese hamster cells 5 (double-strand-break rejoining), XRCC5, G22P2

**Calculated MW**

82705 MW KDa

**Application Details**

Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, By Heat<br>Western blot, 0.1-0.5 µg/ml, Human, Mouse, Rat<br>

**Subcellular Localization**

Nucleus. Nucleus, nucleolus. Chromosome.

**Protein Name**

X-ray repair cross-complementing protein 5

**Contents**

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na<sub>2</sub>HPO<sub>4</sub>, 0.05mg Na<sub>3</sub>N.

**Immunogen**

A synthetic peptide corresponding to a sequence at the C-terminus of human Ku80 (649-676 aa FSEEQRFNNFLKALQEKVEIKQLNHFWE), different from the related mouse sequence by three amino acids.

**Purification**

Immunogen affinity purified.

**Cross Reactivity**

No cross reactivity with other proteins

**Storage**

**At -20°C for one year. After r°Constitution, at 4°C for one month. It°Can also be aliquotted and stored frozen at -20°C for a longer time.Avoid repeated freezing and thawing.**

**Sequence Similarities**

Belongs to the ku80 family.

**Anti-Ku80 Picoband 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:<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>). Required for double-strand break repair and V(D)J recombination (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>). 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-XRCC6 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>).

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-XRCC6 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-XRCC6 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-XRCC6 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-XRCC6 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-XRCC6 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

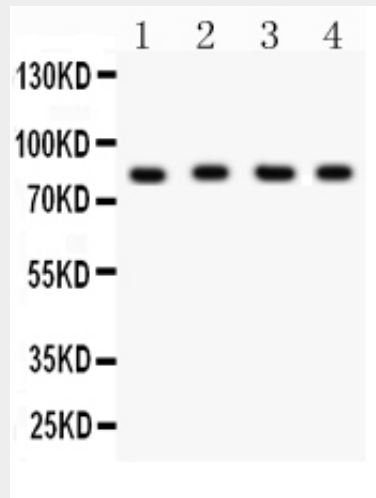
### Anti-Ku80 Picoband Antibody - Protocols

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

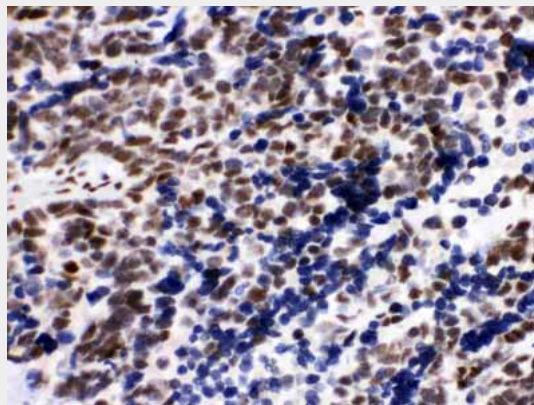
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)

- [Cell Culture](#)

### Anti-Ku80 Picoband Antibody - Images



Anti- KU80 Picoband antibody, ABO12153, Western blotting  
 All lanes: Anti KU80 (ABO12153) at 0.5ug/ml  
 Lane 1: Rat Testis Tissue Lysate at 50ug  
 Lane 2: Rat Thymus Tissue Lysate at 50ug  
 Lane 3: HELA Whole Cell Lysate at 40ug  
 Lane 4: NIH3T3 Whole Cell Lysate at 40ug  
 Predicted bind size: 83KD  
 Observed bind size: 83KD



Anti- KU80 Picoband antibody, ABO12153, IHC(P) IHC(P): Human Lung Cancer Tissue

### Anti-Ku80 Picoband Antibody - Background

XRCC5 (X-ray Repair, Complementing Defective, In Chinese Hamster, 5), also known as Ku80 or Ku86, is a protein that in humans, is encoded by the XRCC5 gene. The XRCC5 gene encodes the 80-kD subunit of the Ku autoantigen, a heterodimer which contributes to genomic integrity through its ability to bind DNA double-strand breaks and facilitate repair by the nonhomologous end joining (NHEJ) pathway. The XRCC5 gene is mapped to 2q35. Human colon cancer cells heterozygous for Ku86 are haploinsufficient with an increase in polyploid cells, a reduction in cell proliferation, elevated p53 levels, and a slight hypersensitivity to ionizing radiation. Functional inactivation of the second Ku86 allele results in cells with a drastically reduced doubling time. The Ku86 locus is essential in human somatic tissue culture cells by experiments demonstration. A rare microsatellite polymorphism in XRCC5 is associated with cancer in patients of varying radiosensitivity.