

XRCC5 / Ku80 Antibody (Internal)
Goat Polyclonal Antibody
Catalog # ALS12327**Specification**

XRCC5 / Ku80 Antibody (Internal) - Product Information

Application	IHC
Primary Accession	P13010
Reactivity	Human
Host	Goat
Clonality	Polyclonal
Calculated MW	83kDa KDa

XRCC5 / Ku80 Antibody (Internal) - 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

Target/Specificity

Human XRCC5 / Ku80.

Reconstitution & Storage

Store at -20°C. Minimize freezing and thawing.

Precautions

XRCC5 / Ku80 Antibody (Internal) is for research use only and not for use in diagnostic or therapeutic procedures.

XRCC5 / Ku80 Antibody (Internal) - 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:7957065, PubMed:8621488, PubMed:12145306, PubMed:11493912). Required for double-strand break repair and V(D)J recombination (PubMed:<a

[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), PubMed: [12145306](http://www.uniprot.org/citations/12145306), PubMed: [11493912](http://www.uniprot.org/citations/11493912)). 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: [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-XRCC6 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-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: [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- XRCC6 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- XRCC6 dimer binds to the osteocalcin promoter and activates osteocalcin expression (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), PubMed: [20383123](http://www.uniprot.org/citations/20383123)).

[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)).

Cellular Location

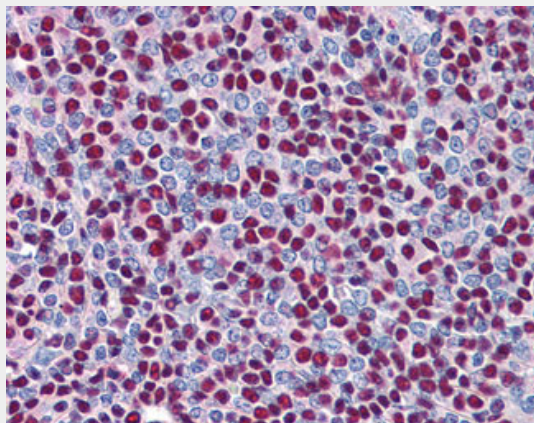
Nucleus. Nucleus, nucleolus. Chromosome

XRCC5 / Ku80 Antibody (Internal) - 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](#)

XRCC5 / Ku80 Antibody (Internal) - Images



Anti-XRCC5 / Ku80 antibody IHC of human spleen.

XRCC5 / Ku80 Antibody (Internal) - 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.

In association with NAA15, the XRCC5/6 dimer binds to the osteocalcin promoter and activates osteocalcin expression. 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.

XRCC5 / Ku80 Antibody (Internal) - References

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Ota T.,et al.Nat. Genet. 36:40-45(2004).
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