

# Ku80 Antibody

Purified Mouse Monoclonal Antibody (Mab)

Catalog # AP52826

## Product Information

|                   |                        |
|-------------------|------------------------|
| Application       | WB, ICC, IP            |
| Primary Accession | <a href="#">P13010</a> |
| Reactivity        | Human                  |
| Host              | Mouse                  |
| Clonality         | Monoclonal             |
| Isotype           | IgG1                   |
| Calculated MW     | 82705                  |

## Additional Information

|             |  |
|-------------|--|
| Gene ID     | 7520   |
| Other Names | 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; Double strand break rejoining; FLJ39089; G22P2; KARP 1; KARP1; Ku 80; Ku autoantigen 80kDa; Ku80; 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. |
| Dilution    | WB~~1:1000 ICC~~1:400 IP~~1:500  |
| Format      | Purified mouse monoclonal antibody in PBS(pH 7.4) containing with 0.09% (W/V) sodium azide and 50% glycerol.   |
| Storage     | Store at -20 °C.Stable for 12 months from date of receipt  |

## 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="#">11493912</a> , PubMed: <a href="#">12145306</a> , PubMed: <a href="#">7957065</a> , PubMed: <a href="#">8621488</a> ). |

Required for double-strand break repair and V(D)J recombination (PubMed:[11493912](#), PubMed:[12145306](#), PubMed:[7957065](#), PubMed:[8621488](#)). Also has a role in chromosome translocation (PubMed:[11493912](#), PubMed:[12145306](#), PubMed:[7957065](#), PubMed:[8621488](#)). The DNA helicase II complex binds preferentially to fork-like ends of double-stranded DNA in a cell cycle-dependent manner (PubMed:[11493912](#), PubMed:[12145306](#), PubMed:[7957065](#), PubMed:[8621488](#)). It works in the 3'-5' direction (PubMed:[11493912](#), PubMed:[12145306](#), PubMed:[7957065](#), PubMed:[8621488](#)). 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:[11493912](#), PubMed:[12145306](#), PubMed:[7957065](#), PubMed:[8621488](#)). Binding to DNA may be mediated by XRCC6 (PubMed:[11493912](#), PubMed:[12145306](#), PubMed:[7957065](#), PubMed:[8621488](#)). 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:[11493912](#), PubMed:[12145306](#), PubMed:[20383123](#), PubMed:[7957065](#), PubMed:[8621488](#)). The XRCC5-XRCC6 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 (PubMed:[12145306](#), PubMed:[20383123](#), PubMed:[7957065](#), PubMed:[8621488](#)). 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](#)). 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](#)). The XRCC5-XRCC6 dimer together with APEX1 acts as a negative regulator of transcription (PubMed:[8621488](#)). In association with NAA15, the XRCC5-XRCC6 dimer binds to the osteocalcin promoter and activates osteocalcin expression (PubMed:[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](#)). Binding to U3 small nucleolar RNA, recruits PRKDC and XRCC5/Ku86 to the small-subunit processome (PubMed:[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](#)).

## Cellular Location

Nucleus. Nucleus, nucleolus Chromosome

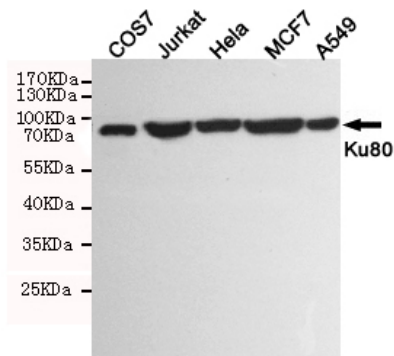
## Background

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.

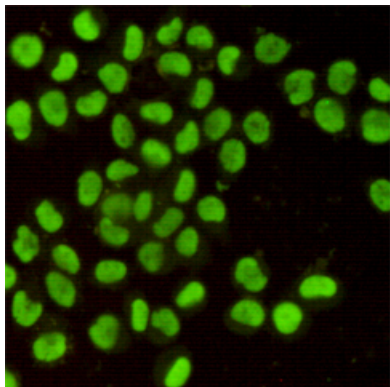
## References

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Suzuki Y.,et al.Submitted (APR-2005) to the EMBL/GenBank/DDBJ databases.  
Mural R.J.,et al.Submitted (JUL-2005) to the EMBL/GenBank/DDBJ databases.

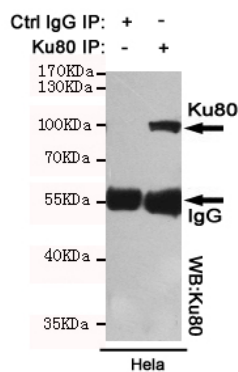
## Images



Western blot detection of Ku80 in COS7, Jurkat, HeLa, MCF7 and A549 cell lysates using Ku80 mouse mAb (1:1000 diluted). Predicted band size: 86KDa. Observed band size: 86KDa.



Immunofluorescent analysis of HeLa cells using Ku80 mouse mAb (1:400).



Immunoprecipitation analysis of HeLa cell lysates using Ku80 mouse mAb.

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