

# Ku80 Antibody

Rabbit mAb Catalog # AP90645

#### **Product Information**

**Application** WB, IHC, IF, ICC, IP, IHF

Primary Accession
Reactivity
Human
Clonality
Monoclonal

Other Names CTC box-binding factor 85 kDa subunit; CTC85; CTCBF; DNA repair protein

XRCC5; G22P2; KARP1; Ku autoantigen, 80kDa; Ku80; Ku86 autoantigen

related protein 1; KUB2; NFIV;

IsotypeRabbit IgGHostRabbitCalculated MW82705

### **Additional Information**

**Dilution** WB 1:5000~1:10000 IHC 1:50~1:200 ICC/IF 1:100~1:500 IP 1:50

**Purification** Affinity-chromatography

Immunogen A synthesized peptide derived from human Ku80

**Description** 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.

Storage Condition and Buffer Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium

azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term.

Avoid freeze / thaw cycle.

### **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, PubMed:12145306, PubMed:7957065, PubMed:8621488).

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,

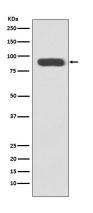
PubMed: 12145306, PubMed: 7957065, PubMed: 8621488). The DNA helicase II complex binds preferentially to fork-like ends of double-stranded DNA in a cell cycle-dependent manner (PubMed: 11493912, PubMed: 12145306, PubMed: 7957065, PubMed: 8621488). It works in the 3'-5' direction

(PubMed: 11493912, PubMed: 12145306, PubMed: 7957065, PubMed: 8621488). During NHEJ, the XRCC5-XRRC6 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-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: 11493912, PubMed: 12145306, PubMed: 20383123, PubMed: 7957065, PubMed: 8621488). The XRCC5-XRRC6 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-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). 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-XRRC6 dimer together with APEX1 acts as a negative regulator of transcription (PubMed:8621488). In association with NAA15, the XRCC5-XRRC6 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:<u>32103174</u>). 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

## **Images**



Western blot analysis of Ku80 expression in HeLa cell lysate.

Image not found: 202311/AP90645-IHC.jpg

Immunohistochemical analysis of paraffin-embedded human colon, using Ku80 Antibody.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.