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XRCC5 Antibody (Center K439)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP11960c

Specification

XRCC5 Antibody (Center K439) - Product Information

Application	**IF, WB, FC,E**
Primary Accession	P13010
Other Accession	NP_066964
Reactivity	**Human**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Calculated MW	**82705**
Antigen Region	**424-450**

XRCC5 Antibody (Center K439) - Additional Information

Gene ID 7520

Other Names
X-ray repair cross-complementing protein 5, 364-, 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
This XRCC5 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 424-450 amino acids from the Central region of human XRCC5.

Dilution
IF~~1:10~50
WB~~1:1000
FC~~1:10~50

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

Storage
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
XRCC5 Antibody (Center K439) is for research use only and not for use in diagnostic or therapeutic procedures.

XRCC5 Antibody (Center K439) - 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:7957065, PubMed:8621488, PubMed:12145306, PubMed:11493912). Also has a role in chromosome translocation (PubMed:7957065, PubMed:8621488, PubMed:12145306, PubMed:11493912). The DNA helicase II complex binds preferentially to fork-like ends of double-stranded DNA in a cell cycle-dependent manner (PubMed:7957065, PubMed:8621488, PubMed:12145306, PubMed:11493912). It works in the 3'- 5' direction (PubMed:7957065, PubMed:8621488, PubMed:12145306, PubMed:11493912). 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:7957065, PubMed:8621488, PubMed:12145306, PubMed:11493912). Binding to DNA may be mediated by XRCC6 (PubMed:7957065, PubMed:8621488, PubMed:12145306, PubMed:11493912). 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:7957065, PubMed:8621488, PubMed:12145306, PubMed:20383123, PubMed:11493912). The XRCC5-XRRC6 dimer is probably involved in stabilizing broken DNA ends and bringing them together (PubMed:7957065, PubMed:8621488, PubMed:12145306, PubMed:20383123). The assembly of the DNA-PK complex to DNA ends is required for the NHEJ ligation step (PubMed:7957065, PubMed:8621488, PubMed:12145306, PubMed:20383123). 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: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

XRCC5 Antibody (Center K439) - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

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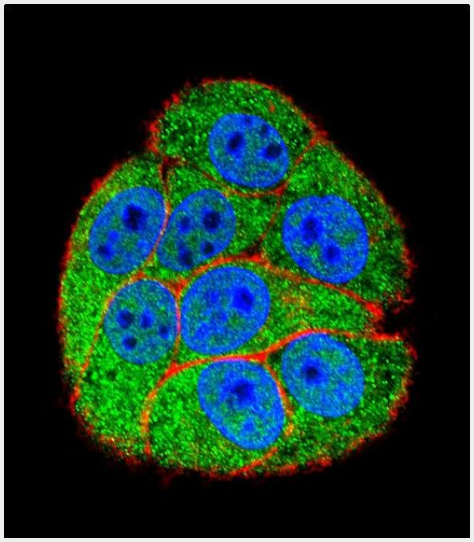
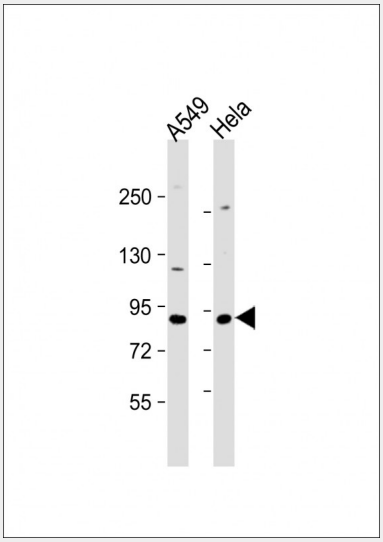
XRCC5 Antibody (Center K439) - Images



Confocal immunofluorescent analysis of XRCC5 Antibody (Center K439)(Cat#AP11960c) with hela cell followed by Alexa Fluor 488-conjugated goat anti-rabbit IgG (green). Actin filaments have been labeled with Alexa Fluor 555 phalloidin (red). DAPI was used to stain the cell nuclear (blue).



All lanes : Anti-XRCC5Antibody(CenterK439) at 1:1000 dilution Lane 1: A549 whole cell lysate Lane 2: Hela whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 83 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

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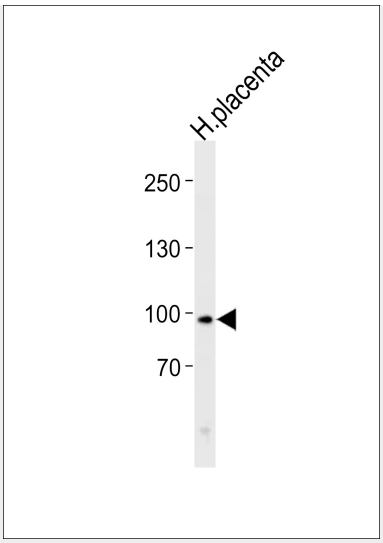
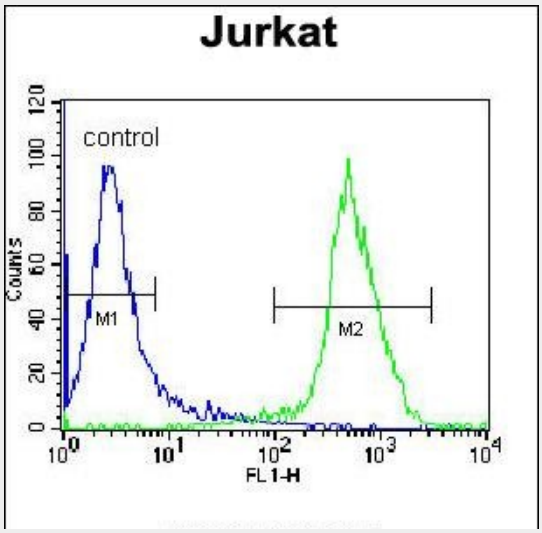


XRCC5 Antibody (CenterK439) (Cat. #AP11960c) western blot analysis in human placenta tissue lysates (35ug/lane).This demonstrates the XRCC5 antibody detected the XRCC5 protein (arrow).



XRCC5 Antibody (Center K439) (Cat. #AP11960c) flow cytometric analysis of Jurkat cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated donkey-anti-rabbit secondary antibodies were used for the analysis.

XRCC5 Antibody (Center K439) - Background

The protein encoded by this gene is the 80-kilodalton subunit of the Ku heterodimer protein which is also known as ATP-dependant DNA helicase II or DNA repair protein XRCC5. Ku is the DNA-binding component of the DNA-dependent protein kinase, and 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. This gene functionally complements Chinese hamster xrs-6, a mutant defective in DNA double-strand break repair and in ability to undergo V(D)J recombination. A rare microsatellite polymorphism in this gene is associated with cancer in patients of varying radiosensitivity.

XRCC5 Antibody (Center K439) - References

Gomes, B.C., et al. Oncol. Rep. 24(4):1079-1085(2010)
Liu, Y., et al. Carcinogenesis 31(10):1762-1769(2010)
Ho-Pun-Cheung, A., et al. Pharmacogenomics J. (2010) In press :
Briggs, F.B., et al. Am. J. Epidemiol. 172(2):217-224(2010)
Monsees, G.M., et al. Breast Cancer Res. Treat. (2010) In press :

XRCC5 Antibody (Center K439) - Citations

- JmjC domain-containing protein 8 (JMJD8) represses Ku70/Ku80 expression via attenuating AKT/NF-κB/COX-2 signaling.