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XRCC5 Antibody (Center K439)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP11960c

Product Information

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

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 FC~~1:10~50 WB~~1:1000 E~~Use at an assay dependent concentration.
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.

Protein Information

Name	XRCC5 (HGNC:12833)
Synonyms	G22P2
Function	DNA-binding protein critical for the DNA damage response, specifically in repairing double-strand breaks (DSBs) via the classical non-homologous end joining (NHEJ) pathway. It forms a heterodimer with XRCC6 (Ku70), creating the Ku70:Ku80 heterodimer (Ku complex), which serves as a DNA end-binding complex. It primarily binds DSBs and recruits essential repair factors, assembling the core long-range NHEJ complex to facilitate the alignment and ligation of broken DNA ends (PubMed:11493912, PubMed:33854234, PubMed:34352203). This pathway ensures the rapid repair of cytotoxic and mutagenic DSBs and contributes to the generation of diversity in T-cell receptors and antibodies through mechanisms such as V(D)J recombination (PubMed:9742108). Likely acts as a 5'-deoxyribose-5-phosphate lyase (5'-dRP lyase), catalyzing the beta-elimination of the 5'-deoxyribose- 5-phosphate at abasic sites near DSBs. This activity cleans the termini of abasic sites, a common form of nucleotide damage, preparing broken ends for ligation (PubMed:20383123). It may also possess 3'-5' DNA helicase activity, although this has not been confirmed in vivo, and its physiological significance remains unclear (PubMed:7957065). Beyond DNA repair, the protein contributes to telomere maintenance (PubMed:29490055). It is also implicated in transcriptional regulation, acting as a cofactor for various transcription factors (PubMed:12145306, PubMed:8621488). It 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). Can also bind RNAs and recruits PRKDC to a wide range of cellular RNAs, including the U3 small nucleolar RNA, playing a role in the biogenesis of ribosomal RNAs (PubMed:32103174).
Cellular Location	Nucleus. Nucleus, nucleolus Chromosome

Background

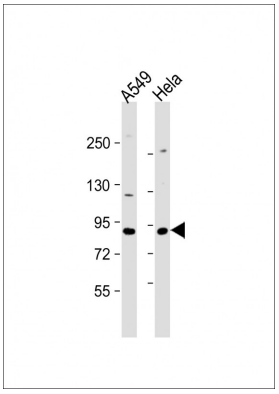
The protein encoded by this gene is the 80-kilodalton subunit of the Ku heterodimer protein which is also known as ATP-dependant DNA helicase II or DNA repair protein XRCC5. Ku is the DNA-binding component of the DNA-dependent protein kinase, and it functions together with the DNA ligase IV-XRCC4 complex 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.

References

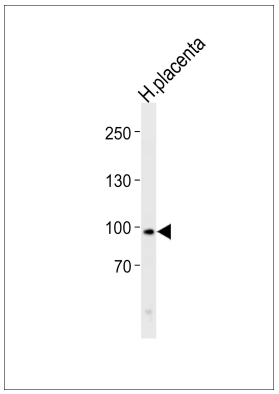
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Images

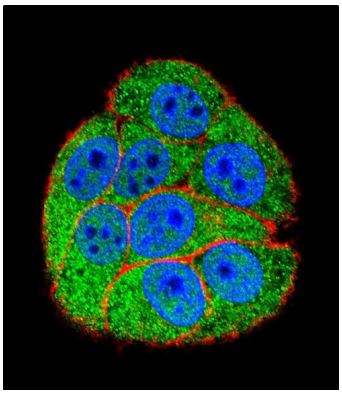
All lanes : Anti-XRCC5Antibody(CenterK439) at 1:1000 dilution Lane 1: A549 whole cell lysate Lane 2: Hela whole cell lysate Lysates/proteins at 20 µg per lane. Secondary



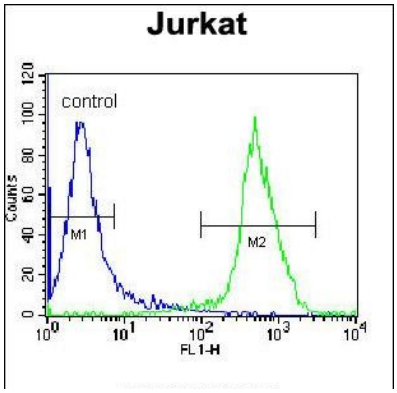
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 83 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



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).



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).



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.

Citations

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

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