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XRCC6 Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP5089c

Specification

XRCC6 Antibody (Center) - Product Information

Application	**IF, WB, IHC-P, FC,E**
Primary Accession	P12956
Other Accession	NP_001460.1
Reactivity	**Human**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Calculated MW	**69843**
Antigen Region	**228-254**

XRCC6 Antibody (Center) - Additional Information

Gene ID 2547

Other Names
X-ray repair cross-complementing protein 6, 364-, 4299-, 5'-deoxyribose-5-phosphate lyase Ku70, 5'-dRP lyase Ku70, 70 kDa subunit of Ku antigen, ATP-dependent DNA helicase 2 subunit 1, ATP-dependent DNA helicase II 70 kDa subunit, CTC box-binding factor 75 kDa subunit, CTC75, CTCBF, DNA repair protein XRCC6, Lupus Ku autoantigen protein p70, Ku70, Thyroid-lupus autoantigen, TLAA, X-ray repair complementing defective repair in Chinese hamster cells 6, XRCC6, G22P1

Target/Specificity
This XRCC6 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 228-254 amino acids from the Central region of human XRCC6.

Dilution
IF~~1:10~50
WB~~1:1000
IHC-P~~1:50~100
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
XRCC6 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

XRCC6 Antibody (Center) - Protein Information

Name XRCC6

Synonyms G22P1

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, PubMed:20493174, PubMed:2466842, PubMed:9742108). Required for double-strand break repair and V(D)J recombination (PubMed:7957065, PubMed:8621488, PubMed:12145306, PubMed:11493912, PubMed:20493174, PubMed:2466842, PubMed:9742108). Also has a role in chromosome translocation (PubMed:7957065, PubMed:8621488, PubMed:12145306, PubMed:11493912, PubMed:20493174, PubMed:2466842, PubMed:9742108). Has a role in chromosome translocation (PubMed:7957065, PubMed:20493174, PubMed:2466842, PubMed:9742108, 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:20493174, PubMed:2466842, PubMed:9742108, PubMed:12145306, PubMed:11493912). It works in the 3'-5' direction (PubMed:20493174, PubMed:2466842, PubMed:9742108, 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:20493174, PubMed:2466842, PubMed:9742108, PubMed:12145306, PubMed:11493912). Binding to DNA may be mediated by XRCC6 (PubMed:20493174, PubMed:2466842, PubMed:9742108, 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:11493912, PubMed:20493174, PubMed:2466842, PubMed:9742108). The XRCC5-XRRC6 dimer is probably involved in stabilizing broken DNA ends and bringing them together (PubMed:7957065, PubMed:8621488, PubMed:12145306, PubMed:11493912, PubMed:20493174, PubMed:2466842, PubMed:9742108). The assembly of the DNA-PK complex to DNA ends is required for the NHEJ ligation step (PubMed:7957065, PubMed:8621488, PubMed:12145306, PubMed:11493912, PubMed:20493174, PubMed:2466842, PubMed:9742108). 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). 5'-dRP lyase activity 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). 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. Chromosome

XRCC6 Antibody (Center) - Protocols

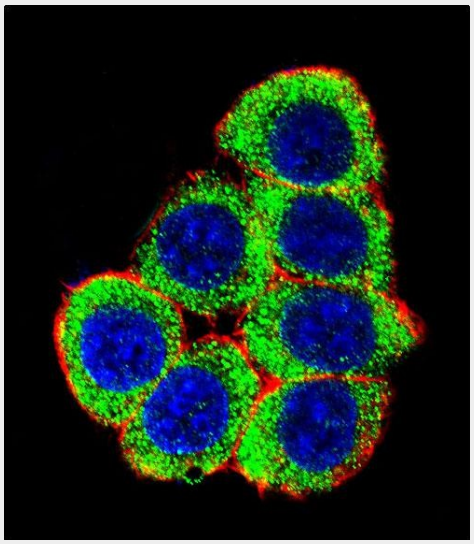
Provided below are standard protocols that you may find useful for product applications.

- Western Blot

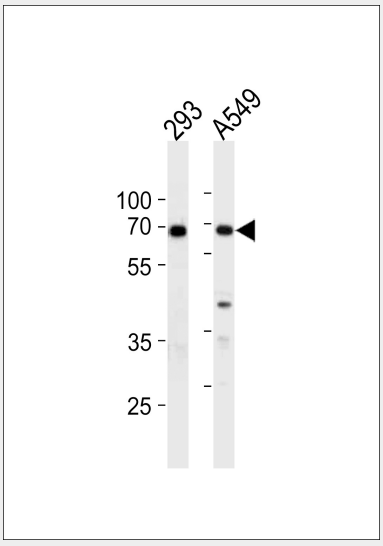
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- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

XRCC6 Antibody (Center) - Images

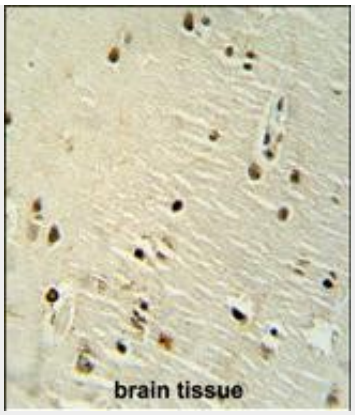


Confocal immunofluorescent analysis of XRCC6 Antibody (Center)(Cat#AP5089c) with 293 cell followed by Alexa Fluor 488-conjugated goat anti-rabbit IgG (green). Actin filaments have been labeled with Alexa Fluor 555 phalloidin (red).DAPI was used to stain the cell nuclear (blue).

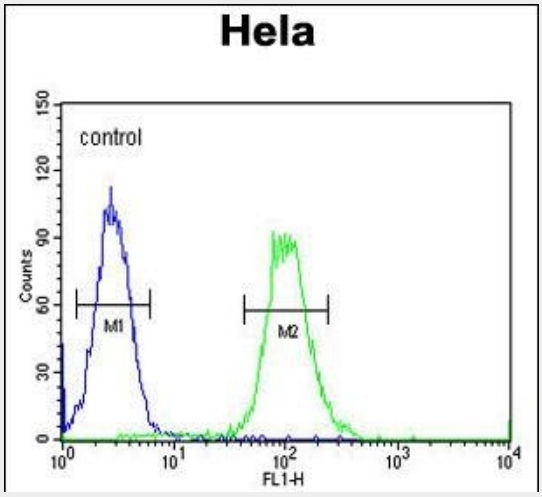


XRCC6 Antibody (Center) (Cat. #AP5089c) western blot analysis in 293,A549 cell line lysates (35ug/lane).This demonstrates the XRCC6 antibody detected the XRCC6 protein (arrow).

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XRCC6 antibody (Center) (Cat. #AP5089c) immunohistochemistry analysis in formalin fixed and paraffin embedded human brain tissue followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the XRCC6 antibody (Center) for immunohistochemistry. Clinical relevance has not been evaluated.



XRCC6 Antibody (Center) (Cat. #AP5089c) flow cytometric analysis of Hela cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

XRCC6 Antibody (Center) - Background

The p70/p80 autoantigen is a nuclear complex consisting of two subunits with molecular masses of approximately 70 and 80 kDa. The complex functions as a single-stranded DNA-dependent ATP-dependent helicase. The complex may be involved in the repair of nonhomologous DNA ends such as that required for double-strand break repair, transposition, and V(D)J recombination. High levels of autoantibodies to p70 and p80 have been found in some patients with systemic lupus erythematosus.

XRCC6 Antibody (Center) - References

Bailey, S.D., et al. Diabetes Care 33(10):2250-2253(2010) Liu, Y., et al. Carcinogenesis 31(10):1762-1769(2010) Briggs, F.B., et al. Am. J. Epidemiol. 172(2):217-224(2010) Pace, P., et al. Science 329(5988):219-223(2010) Sobczuk, A., et al. Pol J Pathol 61(1):27-31(2010)