

XRCC6 / Ku70 Antibody (clone 4C2-1A6)
Mouse Monoclonal Antibody
Catalog # ALS14031**Specification**

XRCC6 / Ku70 Antibody (clone 4C2-1A6) - Product Information

Application	WB, IF, IHC
Primary Accession	P12956
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Calculated MW	70kDa KDa

XRCC6 / Ku70 Antibody (clone 4C2-1A6) - Additional Information**Gene ID** 2547**Other Names**

X-ray repair cross-complementing protein 6, 3.6.4.-, 4.2.99.-, 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

Human XRCC6

Reconstitution & Storage

Short term 4°C, long term aliquot and store at -20°C, avoid freeze thaw cycles.

Precautions

XRCC6 / Ku70 Antibody (clone 4C2-1A6) is for research use only and not for use in diagnostic or therapeutic procedures.

XRCC6 / Ku70 Antibody (clone 4C2-1A6) - 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-XRCC6 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).

target="_blank">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

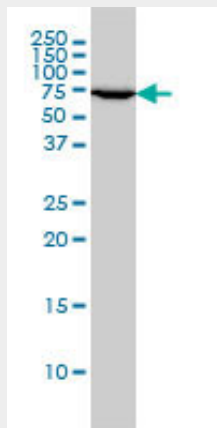
XRCC6 / Ku70 Antibody (clone 4C2-1A6) - Protocols

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

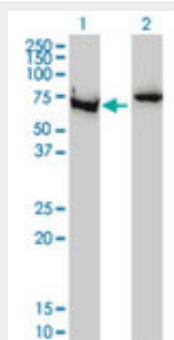
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)

- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

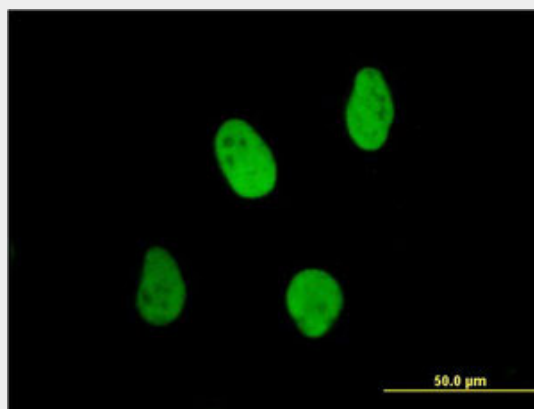
XRCC6 / Ku70 Antibody (clone 4C2-1A6) - Images



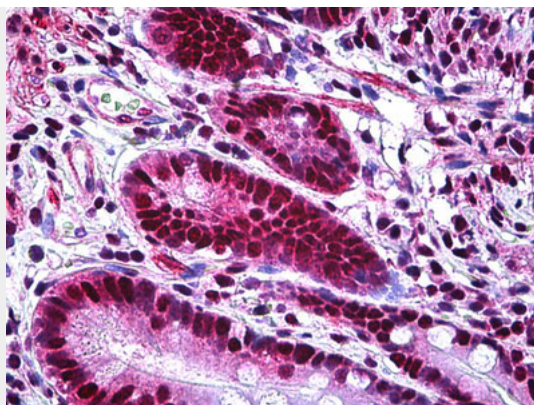
XRCC6 monoclonal antibody ALS14031 for Western blot of XRCC6 expression in C32.



Western blot of XRCC6 expression in transfected 293T cell line by ALS14031.



Immunofluorescence of monoclonal antibody to XRCC6 on HeLa cell. [antibody concentration 10 ug/ml]



Anti-XRCC6 / Ku70 antibody IHC of human small intestine.

XRCC6 / Ku70 Antibody (clone 4C2-1A6) - 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. Required for osteocalcin gene expression. 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. 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. The XRCC5/6 dimer together with APEX1 acts as a negative regulator of transcription.

XRCC6 / Ku70 Antibody (clone 4C2-1A6) - References

Chan J.Y.,et al.J. Biol. Chem. 264:3651-3654(1989).
Reeves W.H.,et al.J. Biol. Chem. 264:5047-5052(1989).
Griffith A.J.,et al.Mol. Biol. Rep. 16:91-97(1992).
Ota T.,et al.Nat. Genet. 36:40-45(2004).
Halleck A.,et al.Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.

XRCC6 / Ku70 Antibody (clone 4C2-1A6) - Citations

- [Chromatin association of XRCC5/6 in the absence of DNA damage depends on the XPE gene product DDB2.](#)