10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

XRCC5 Antibody (Center K439) Blocking peptide
Synthetic peptide
Catalog # BP11960c

Specification

XRCC5 Antibody (Center K439) Blocking peptide - Product Information

Primary Accession P13010

XRCC5 Antibody (Center K439) Blocking peptide - 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

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

XRCC5 Antibody (Center K439) Blocking peptide - 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:<a href="http://www.uniprot.org/citations/7957065"

target="_blank">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) Blocking peptide - Protocols

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

- Blocking Peptides

XRCC5 Antibody (Center K439) Blocking peptide - Images

XRCC5 Antibody (Center K439) Blocking peptide - Background

The protein encoded by this gene is the 80-kilodaltonsubunit of the Ku heterodimer protein which is also known asATP-dependant DNA helicase II or DNA repair protein XRCC5. Ku isthe DNA-binding component of the DNA-dependent protein kinase, andit functions together with the DNA ligase IV-XRCC4 complex in therepair of DNA double-strand break by non-homologous end joining andthe completion of V(D)J recombination events. This genefunctionally complements Chinese hamster xrs-6, a mutant defectivein DNA double-strand break repair and in ability to undergo V(D)Jrecombination. A rare microsatellite polymorphism in this gene isassociated with cancer in patients of varying radiosensitivity.

XRCC5 Antibody (Center K439) Blocking peptide - 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 :