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XRCC4 Antibody (Center) Blocking Peptide
Synthetic peptide
Catalog # BP18904b

Specification

XRCC4 Antibody (Center) Blocking Peptide - Product Information

Primary Accession Q13426

XRCC4 Antibody (Center) Blocking Peptide - Additional Information

Gene ID 7518

Other Names
DNA repair protein XRCC4, X-ray repair cross-complementing protein 4, XRCC4

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.

XRCC4 Antibody (Center) Blocking Peptide - Protein Information

Name XRCC4 {ECO:0000303|PubMed:8548796, ECO:0000312|HGNC:HGNC:12831}

Function
[DNA repair protein XRCC4]: DNA non-homologous end joining (NHEJ) core factor, required for double-strand break repair and V(D)J recombination (PubMed:10757784, PubMed:10854421, PubMed:17124166, PubMed:16412978, PubMed:8548796, PubMed:25742519, PubMed:12517771, PubMed:17290226, PubMed:22228831, PubMed:25597996, PubMed:25934149, PubMed:26100018, PubMed:26774286). Acts as a scaffold protein that regulates recruitment of other proteins to DNA double-strand breaks (DSBs) (PubMed:15385968, PubMed:20852255,

PubMed:26774286, PubMed:27437582). Associates with NHEJ1/XLF to form alternating helical filaments that bridge DNA and act like a bandage, holding together the broken DNA until it is repaired (PubMed:26100018, PubMed:27437582, PubMed:28500754, PubMed:21775435, PubMed:22287571, PubMed:21768349). The XRCC4-NHEJ1/XLF subcomplex binds to the DNA fragments of a DSB in a highly diffusive manner and robustly bridges two independent DNA molecules, holding the broken DNA fragments in close proximity to one other (PubMed:27437582). The mobility of the bridges ensures that the ends remain accessible for further processing by other repair factors (PubMed:27437582). Plays a key role in the NHEJ ligation step of the broken DNA during DSB repair via direct interaction with DNA ligase IV (LIG4): the LIG4-XRCC4 subcomplex reseals the DNA breaks after the gap filling is completed (PubMed:9242410, PubMed:10757784, PubMed:10854421, PubMed:12517771, PubMed:17290226, PubMed:19837014). XRCC4 stabilizes LIG4, regulates its subcellular localization and enhances LIG4's joining activity (PubMed:9242410, PubMed:10757784, PubMed:10854421, PubMed:12517771, PubMed:17290226, PubMed:21982441, PubMed:22228831). Binding of the LIG4-XRCC4 subcomplex to DNA ends is dependent on the assembly of the DNA-dependent protein kinase complex DNA-PK to these DNA ends (PubMed:10757784, PubMed:10854421). Promotes displacement of PNKP from processed strand break termini (PubMed:20852255, PubMed:28453785).

Cellular Location
Nucleus. Chromosome. Note=Localizes to site of double-strand breaks.

Tissue Location
Widely expressed..

XRCC4 Antibody (Center) Blocking Peptide - Protocols

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

- Blocking Peptides

XRCC4 Antibody (Center) Blocking Peptide - Images

XRCC4 Antibody (Center) Blocking Peptide - Background

The protein encoded by this gene functions together withDNA ligase IV and the DNA-dependent protein kinase in the repair ofDNA double-strand break by non-homologous end joining and thecompletion of V(D)J recombination events. The non-homologousend-joining pathway is required both for normal development and forsuppression of tumors. This gene functionally complements XR-1Chinese hamster ovary cell mutant, which is impaired in DNAdouble-strand breaks produced by ionizing radiation and restrictionenzymes. Alternative transcription initiation and alternativesplicing generates several transcript variants. [provided byRefSeq].

XRCC4 Antibody (Center) 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)Briggs, F.B., et al. Am. J. Epidemiol. 172(2):217-224(2010)Liu, N., et al. Wei Sheng Yan Jiu 39(4):407-411(2010)Bau, D.T., et al. Anticancer Res. 30(7):2727-2730(2010)