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

XRCC4 Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP18904b

Product Information

Application	WB, E
Primary Accession	Q13426
Other Accession	NP_003392.1
Reactivity	Human
Predicted	Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB40148
Calculated MW	38287
Antigen Region	205-234

Additional Information

Gene ID	7518
Other Names	DNA repair protein XRCC4, X-ray repair cross-complementing protein 4, XRCC4
Target/Specificity	This XRCC4 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 205-234 amino acids from the Central region of human XRCC4.
Dilution	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	XRCC4 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

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:12517771, PubMed:16412978, PubMed:17124166, PubMed:17290226, PubMed:22228831, PubMed:25597996, PubMed:25742519, PubMed:25934149, PubMed:26100018, PubMed:26774286, PubMed:8548796). 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:21768349, PubMed:21775435, PubMed:22287571, PubMed:26100018, PubMed:27437582, PubMed:28500754). 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:10757784, PubMed:10854421, PubMed:12517771, PubMed:17290226, PubMed:19837014, PubMed:9242410). XRCC4 stabilizes LIG4, regulates its subcellular localization and enhances LIG4's joining activity (PubMed:10757784, PubMed:10854421, PubMed:12517771, PubMed:17290226, PubMed:21982441, PubMed:22228831, PubMed:9242410). 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..

Background

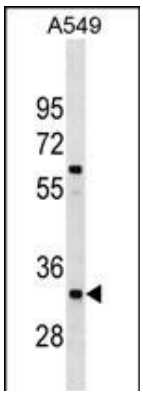
The protein encoded by this gene functions together with DNA ligase IV and the DNA-dependent protein kinase in the repair of DNA double-strand break by non-homologous end joining and the completion of V(D)J recombination events. The non-homologous end-joining pathway is required both for normal development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

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)

Images

XRCC4 Antibody (Center)(Cat. #AP18904b) western blot analysis in A549 cell line lysates (35ug/lane).This



demonstrates the XRCC4 antibody detected the XRCC4 protein (arrow).

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