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NHEJ1 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP14503b

Product Information

Application	WB, E
Primary Accession	Q9H9Q4
Other Accession	NP_079058.1
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB34204
Calculated MW	33337
Antigen Region	268-296

Additional Information

Gene ID	79840
Other Names	Non-homologous end-joining factor 1, Protein cernunnos, XRCC4-like factor, NHEJ1, XLF
Target/Specificity	This NHEJ1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 268-296 amino acids from the C-terminal region of human NHEJ1.
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	NHEJ1 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	NHEJ1 {ECO:0000303|PubMed:17191205, ECO:0000312|HGNC:HGNC:25737}
Function	DNA repair protein involved in DNA non-homologous end joining (NHEJ); it is required for double-strand break (DSB) repair and V(D)J recombination and is also involved in telomere maintenance (PubMed:16439204,

PubMed:16439205, PubMed:17317666, PubMed:17470781, PubMed:17717001, PubMed:18158905, PubMed:18644470, PubMed:20558749, PubMed:26100018, PubMed:28369633). Plays a key role in NHEJ by promoting the ligation of various mismatched and non-cohesive ends (PubMed:17470781, PubMed:17717001, PubMed:19056826). Together with PAXX, collaborates with DNA polymerase lambda (POLL) to promote joining of non-cohesive DNA ends (PubMed:25670504, PubMed:30250067). May act in concert with XRCC5-XRCC6 (Ku) to stimulate XRCC4-mediated joining of blunt ends and several types of mismatched ends that are non- complementary or partially complementary (PubMed:16439204, PubMed:16439205, PubMed:17317666, PubMed:17470781). In some studies, has been shown to associate with XRCC4 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:22228831, PubMed:22287571, PubMed:26100018, PubMed:27437582, PubMed:28500754). Alternatively, it has also been shown that rather than forming filaments, a single NHEJ1 dimer interacts through both head domains with XRCC4 to promote the close alignment of DNA ends (By similarity). 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, PubMed:28500754). The mobility of the bridges ensures that the ends remain accessible for further processing by other repair factors (PubMed:27437582). Binds DNA in a length-dependent manner (PubMed:17317666, PubMed:18158905).

Cellular Location Nucleus. Chromosome. Note=Localizes to site of double-strand breaks; recruitment is dependent on XRCC5-XRCC6 (Ku) heterodimer

Tissue Location Ubiquitously expressed.

Background

Double-strand breaks in DNA result from genotoxic stresses and are among the most damaging of DNA lesions. This gene encodes a DNA repair factor essential for the nonhomologous end-joining pathway, which preferentially mediates repair of double-stranded breaks. Mutations in this gene cause different kinds of severe combined immunodeficiency disorders.

References

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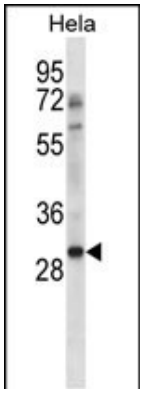
Briggs, F.B., et al. Am. J. Epidemiol. 172(2):217-224(2010)
Okada, Y., et al. Hum. Mol. Genet. 19(11):2303-2312(2010)
Andres, S.N., et al. Mol. Cell 28(6):1093-1101(2007)
Tsai, C.J., et al. Proc. Natl. Acad. Sci. U.S.A. 104(19):7851-7856(2007)

Images

NHEJ1 Antibody (C-term) (Cat. #AP14503b) western blot analysis in Hela cell line lysates (35ug/lane).This demonstrates the NHEJ1 antibody detected the NHEJ1 protein (arrow).



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