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KD-Validated Anti-Non-Homologous End Joining Factor 1 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1608

Product Information

Application	WB, FC, ICC
Primary Accession	Q9H9Q4
Reactivity	Human
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	24GB480
Calculated MW	33337
Gene Name	NHEJ1
Aliases	Non-Homologous End Joining Factor 1; XLF; XRCC4-Like Factor; Non-Homologous End-Joining Factor 1; Nonhomologous End-Joining Factor 1; Protein Cernunnos; Cernunnos; FLJ12610
Immunogen	A synthesized peptide derived from human XLF

Additional Information

Gene ID	79840
Other Names	Non-homologous end-joining factor 1, Protein cernunnos, XRCC4-like factor, NHEJ1 {ECO:0000303|PubMed:17191205, ECO:0000312|HGNC:HGNC:25737}

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.

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