

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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