

NHEJ1 Antibody (C-term) Blocking Peptide
Synthetic peptide
Catalog # BP14503b**Specification**

NHEJ1 Antibody (C-term) Blocking Peptide - Product InformationPrimary Accession [Q9H9Q4](#)**NHEJ1 Antibody (C-term) Blocking Peptide - Additional Information****Gene ID** 79840**Other Names**

Non-homologous end-joining factor 1, Protein cernunnos, XRCC4-like factor, NHEJ1, XLF

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.

NHEJ1 Antibody (C-term) Blocking Peptide - 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); required for double-strand break (DSB) repair and V(D)J recombination (PubMed:16439204, PubMed:16439205, PubMed:17717001, PubMed:17317666, PubMed:17470781, PubMed:18644470, PubMed:20558749, PubMed:26100018, PubMed:18158905). Plays a key role in NHEJ by promoting the ligation of various mismatched and non-cohesive ends (PubMed:17717001, PubMed:17470781, PubMed:19056826). Together with PAXX, collaborates with DNA polymerase lambda (POLL) to promote joining of non-cohesive DNA ends (PubMed:30250067, PubMed:25670504).

target="_blank">25670504). 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:22228831, PubMed:26100018, PubMed:28500754, PubMed:27437582, PubMed:21775435, PubMed:22287571, PubMed:21768349). 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:28500754, PubMed:27437582). 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.

NHEJ1 Antibody (C-term) Blocking Peptide - Protocols

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

- [Blocking Peptides](#)

NHEJ1 Antibody (C-term) Blocking Peptide - Images

NHEJ1 Antibody (C-term) Blocking Peptide - 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.

NHEJ1 Antibody (C-term) Blocking Peptide - References

Malivert, L., et al. J. Biol. Chem. 285(34):26475-26483(2010) 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)