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Goat Anti-XRCC4-like factor / NHEJ1 Antibody

Peptide-affinity purified goat antibody
Catalog # AF2166a

Specification

Goat Anti-XRCC4-like factor / NHEJ1 Antibody - Product Information

Application	**WB, IHC**
Primary Accession	Q9H9Q4
Other Accession	NP_079058, 79840
Reactivity	**Human**
Predicted	**Dog**
Host	**Goat**
Clonality	**Polyclonal**
Concentration	**100ug/200ul**
Isotype	**IgG**
Calculated MW	**33337**

Goat Anti-XRCC4-like factor / NHEJ1 Antibody - Additional Information

Gene ID 79840

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

Format
0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
Goat Anti-XRCC4-like factor / NHEJ1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Goat Anti-XRCC4-like factor / NHEJ1 Antibody - 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:<a href="http://www.uniprot.org/citations/17470781"

target="_blank">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.

Goat Anti-XRCC4-like factor / NHEJ1 Antibody - Protocols

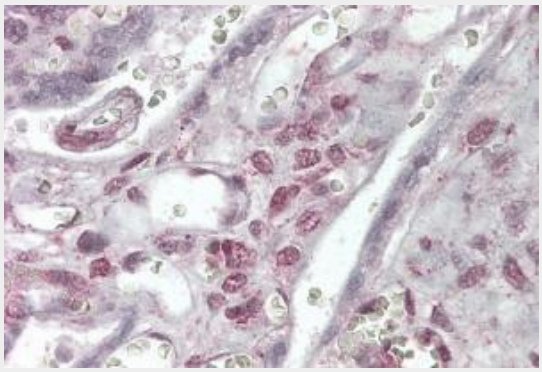
Provided below are standard protocols that you may find useful for product applications.

- Western Blot

- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Goat Anti-XRCC4-like factor / NHEJ1 Antibody - Images

AF2166a (0.1 µg/ml) staining of Human Thyroid lysate (35 µg protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.



AF2166a (3.8 µg/ml) staining of paraffin embedded Human Placenta. Steamed antigen retrieval with citrate buffer pH 6, AP-staining.

Goat Anti-XRCC4-like factor / NHEJ1 Antibody - 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.

Goat Anti-XRCC4-like factor / NHEJ1 Antibody - References

Variation within DNA repair pathway genes and risk of multiple sclerosis. Briggs FB, et al. Am J Epidemiol, 2010 Jul 15. PMID 20522537.
A genome-wide association study in 19 633 Japanese subjects identified LHX3-QSOX2 and IGF1 as adult height loci. Okada Y, et al. Hum Mol Genet, 2010 Jun 1. PMID 20189936.
Characterization of a natural mutator variant of human DNA polymerase lambda which promotes

chromosomal instability by compromising NHEJ. Terrados G, et al. PLoS One, 2009 Oct 6. PMID 19806195.
Novel susceptibility loci for second primary tumors/recurrence in head and neck cancer patients: large-scale evaluation of genetic variants. Wu X, et al. Cancer Prev Res (Phila), 2009 Jul. PMID 19584075.
Requirement for XLF/Cernunnos in alignment-based gap filling by DNA polymerases lambda and mu for nonhomologous end joining in human whole-cell extracts. Akopiants K, et al. Nucleic Acids Res, 2009 Jul. PMID 19420065.