

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, E
Primary Accession	Q9H9O4
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

Dilution

WB~~1:1000
IHC~~1:100~500
E~~N/A

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: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 (POLλ) 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

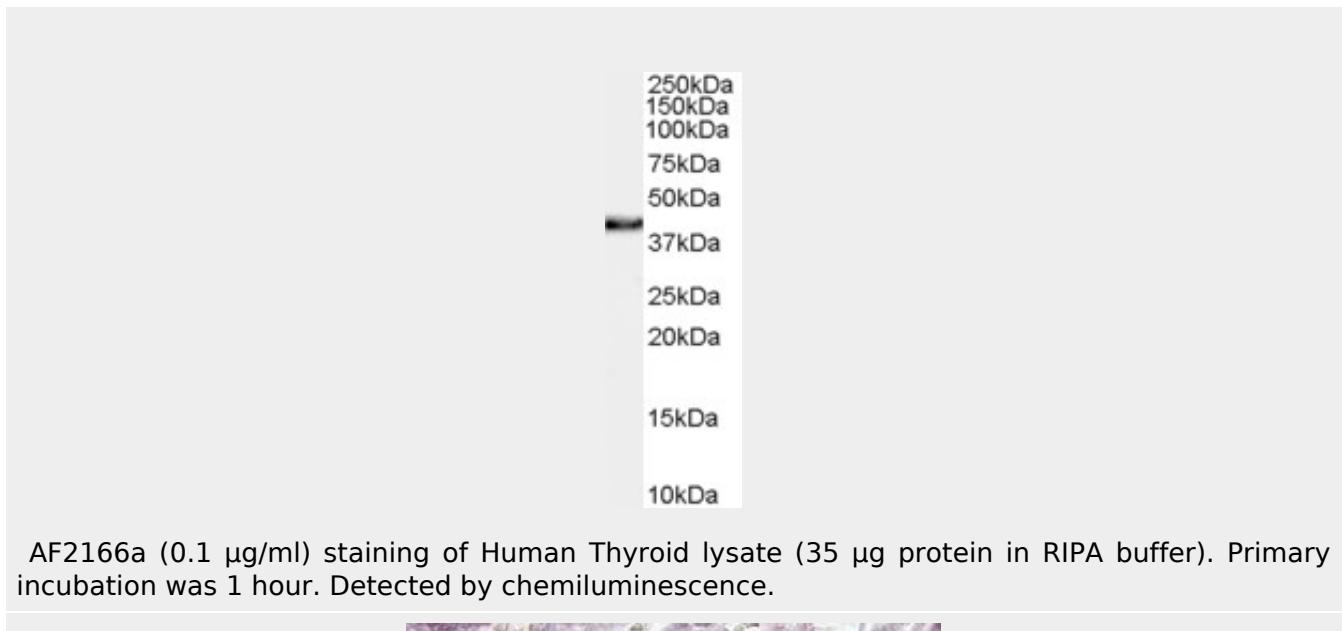
Ubiquitously expressed.

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

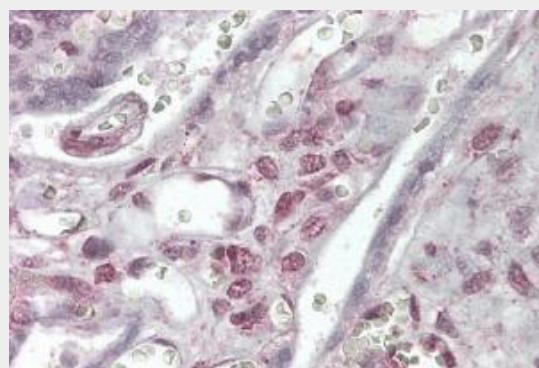
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [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.