SANTA CRUZ BIOTECHNOLOGY, INC.

XLF (FL-299): sc-68901

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

XLF (XRCC4-like factor), also known as non-homologous end-joining factor 1 (NHEJ1) or cernunnos, is a 295 amino acid protein belonging to the XLF family. There are two main repair pathways for DNA double-strand breaks: homologous recombination (HR) and non-homologous end-joining (NHEJ). In the latter pathway, the Ku-70/Ku-86 heterodimer binds the DNA ends together and the DNA-PK catalytic subunits are recruited. Then the DNA ends are processed by DNA processing enzymes, such as Artemis. The binding is finalized through DNA Ligase IV, which acts in a complex with XRCC4 and XLF to stabilize the repair. Thus, it is believed that XLF interacts with DNA Ligase IV and XRCC4 to constitute the enzymatic core of the NHEJ machinery. Two named isoforms of XLF exist as a result of alternative splicing events.

REFERENCES

1. Revy, P., et al. 2006. Cernunnos-XLF, a recently identified non-homologous end-joining factor required for the development of the immune system. Curr. Opin. Allergy Clin. Immunol. 6: 416-420.
2. Drouet, J., et al. 2006. Interplay between Ku, Artemis, and the DNA-dependent protein kinase catalytic subunit at DNA ends. J. Biol. Chem. 281: 27784-27793.
3. Hentges, P., et al. 2006. Evolutionary and functional conservation of the DNA non-homologous end-joining protein, XLF/Cernunnos. J. Biol. Chem. 281: 37517-37526.
4. Windhofer, F., et al. 2007. Low levels of DNA ligases III and IV sufficient for effective NHEJ. J. Cell. Physiol. 213: 475-483.
5. Zha, S., et al. 2007. Defective DNA repair and increased genomic instability in Cernunnos-XLF-deficient murine ES cells. Proc. Natl. Acad. Sci. USA 104: 4518-4523.
6. Tsai, C.J., et al. 2007. Cernunnos/XLF promotes the ligation of mismatched and noncohesive DNA ends. Proc. Natl. Acad. Sci. USA 104: 7851-7856.
7. Mahaney, B.L., et al. 2009. Repair of ionizing radiation-induced DNA double-strand breaks by non-homologous end-joining. Biochem. J. 417: 639-650.

CHROMOSOMAL LOCATION

Genetic locus: NHEJ1 (human) mapping to 2q35; Nhej1 (mouse) mapping to 1 C3.

SOURCE

XLF (FL-299) is a rabbit polyclonal antibody raised against amino acids 1-299 representing full length XLF of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-68901 X, 200 µg/0.1 ml.

APPLICATIONS

XLF (FL-299) is recommended for detection of XLF of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

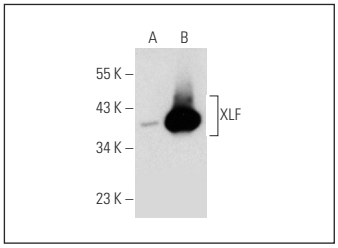
Suitable for use as control antibody for XLF siRNA (h): sc-76936, XLF siRNA (m): sc-76937, XLF shRNA Plasmid (h): sc-76936-SH, XLF shRNA Plasmid (m): sc-76937-SH, XLF shRNA (h) Lentiviral Particles: sc-76936-V and XLF shRNA (m) Lentiviral Particles: sc-76937-V.

XLF (FL-299) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight (predicted) of XLF: 33 kDa.

Molecular Weight (observed) of XLF: 40 kDa.

DATA



XLF (FL-299): sc-68901. Western blot analysis of XLF expression in non-transfected: sc-117752 (**A**) and mouse XLF transfected: sc-124664 (**B**) 293T whole cell lysates.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.