SANTA CRUZ BIOTECHNOLOGY, INC.

XLF (D-1): sc-166488

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.

CHROMOSOMAL LOCATION

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

SOURCE

XLF (D-1) is a mouse monoclonal antibody raised against amino acids 1-130 mapping near the N-terminus of XLF of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-166488 X, 200 µg/0.1 ml.

XLF (D-1) is available conjugated to agarose (sc-166488 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166488 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166488 PE), fluorescein (sc-166488 FITC), Alexa Fluor® 488 (sc-166488 AF488), Alexa Fluor® 546 (sc-166488 AF546), Alexa Fluor® 594 (sc-166488 AF594) or Alexa Fluor® 647 (sc-166488 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166488 AF680) or Alexa Fluor® 790 (sc-166488 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

XLF (D-1) is recommended for detection of XLF of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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 (D-1) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight (predicted) of XLF: 33 kDa.

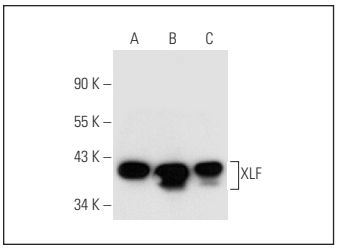
Molecular Weight (observed) of XLF: 40 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

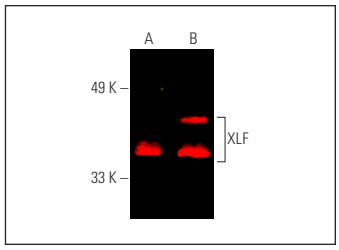
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



XLF (D-1): sc-166488. Western blot analysis of XLF expression in HeLa (**A**), Jurkat (**B**) and A-431 (**C**) whole cell lysates.



XLF (D-1): sc-166488. Near-infrared western blot analysis of XLF expression in Jurkat (**A**) and HEL 92.1.7 (**B**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 790: sc-516181.

SELECT PRODUCT CITATIONS

1. Craxton, A., et al. 2018. PAXX and its paralogs synergistically direct DNA polymerase λ activity in DNA repair. Nat. Commun. 9: 3877.
2. Borude, P., et al. 2018. DNA damage response regulates initiation of liver regeneration following acetaminophen overdose. Gene Expr. 18: 115-123.
3. Nicolai, S., et al. 2020. ZNF281 is recruited on DNA breaks to facilitate DNA repair by non-homologous end joining. Oncogene 39: 754-766.
4. Kinoshita, K., et al. 2020. Combined deletions of IHH and NHEJ1 cause chondrodystrophy and embryonic lethality in the Creeper chicken. Commun. Biol. 3: 144.
5. Lu, H., et al. 2022. DNA-PK_{cs}-dependent phosphorylation of RECQL4 promotes NHEJ by stabilizing the NHEJ machinery at DNA double-strand breaks. Nucleic Acids Res. 50: 5635-5651.

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 for detailed protocols and support products.