SANTA CRUZ BIOTECHNOLOGY, INC.

Nibrin (B-5): sc-515069

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

DNA repair proteins are necessary for the maintenance of chromosome integrity and are involved in the elimination of premutagenic lesions from DNA. The DNA repair proteins Rad51 and Rad52 are key components of the double-strand-break repair (DSBR) pathway. Rad51 is essential for mitotic and meiotic recombination, and its mutation in yeast and mammalian cells results in chromosome loss. Overexpression of Rad52 confers resistance to ionizing radiation and induces homologous intrachromosomal recombination. Rad52 is thought to be involved in an early stage of Rad51-mediated recombination. Additional proteins involved in the pathway include Dmc1 and nibrin. Dmc1 is specifically involved in meiotic recombination. Nibrin, which complexes with Mre11 and Rad50, is absent in Nijemegen breakage syndrome (NBS) patients.

CHROMOSOMAL LOCATION

Genetic locus: NBN (human) mapping to 8q21.3; Nbn (mouse) mapping to 4 A2.

SOURCE

Nibrin (B-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 731-754 at the C-terminus of Nibrin of human 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.

Nibrin (B-5) is available conjugated to agarose (sc-515069 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515069 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515069 PE), fluorescein (sc-515069 FITC), Alexa Fluor® 488 (sc-515069 AF488), Alexa Fluor® 546 (sc-515069 AF546), Alexa Fluor® 594 (sc-515069 AF594) or Alexa Fluor® 647 (sc-515069 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515069 AF680) or Alexa Fluor® 790 (sc-515069 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-515069 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Nibrin (B-5) is recommended for detection of Nibrin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 Nibrin siRNA (h): sc-36061, Nibrin siRNA (m): sc-36062, Nibrin shRNA Plasmid (h): sc-36061-SH, Nibrin shRNA Plasmid (m): sc-36062-SH, Nibrin shRNA (h) Lentiviral Particles: sc-36061-V and Nibrin shRNA (m) Lentiviral Particles: sc-36062-V.

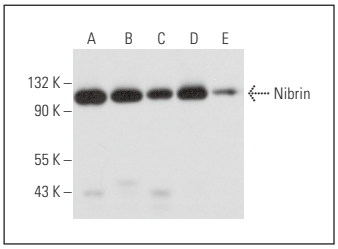
Molecular Weight of Nibrin: 95 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, Jurkat whole cell lysate: sc-2204 or Hep G2 cell lysate: sc-2227.

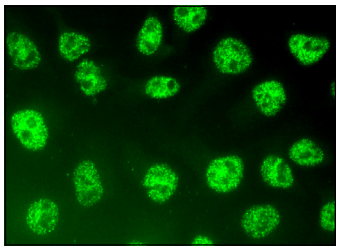
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Nibrin (B-5): sc-515069. Western blot analysis of Nibrin expression in HeLa nuclear extract (**A**) and Jurkat (**B**), HeLa (**C**), Hep G2 (**D**) and HL-60 (**E**) whole cell lysates.



Nibrin (B-5): sc-515069. Immunofluorescence staining of formalin-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Bosso, G., et al. 2019. NBS1 interacts with HP1 to ensure genome integrity. Cell Death Dis. 10: 951.
2. Reuven, N., et al. 2019. Recruitment of DNA repair MRN complex by intrinsically disordered protein domain fused to Cas9 improves efficiency of CRISPR-mediated genome editing. Biomolecules 9: 584.
3. Chen, T.I., et al. 2019. Hepatitis C virus NS3 protein plays a dual role in WRN-mediated repair of non-homologous end joining. J. Virol. 93: e01273-19.

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.