

# Nibrin (A-2): sc-374168

## 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 Nijmegen breakage syndrome (NBS) patients.

## REFERENCES

1. Morita, T., et al. 1993. A mouse homolog of the *Escherichia coli* recA and *Saccharomyces cerevisiae* Rad51 genes. *Proc. Natl. Acad. Sci. USA* 90: 6577-6580.
2. Muris, D.F., et al. 1994. Cloning of human and mouse genes homologous to Rad52, a yeast gene involved in DNA repair and recombination. *Mutat. Res.* 315: 295-305.
3. Park, M.S. 1995. Expression of human Rad52 confers resistance to ionizing radiation in mammalian cells. *J. Biol. Chem.* 270: 15467-15470.

## CHROMOSOMAL LOCATION

Genetic locus: NBN (human) mapping to 8q21.3.

## SOURCE

Nibrin (A-2) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of Nibrin (NBS1) of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Nibrin (A-2) is recommended for detection of Nibrin of 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), immunohistochemistry (including paraffin-embedded sections) (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 shRNA Plasmid (h): sc-36061-SH and Nibrin shRNA (h) Lentiviral Particles: sc-36061-V.

Molecular Weight of Nibrin: 95 kDa.

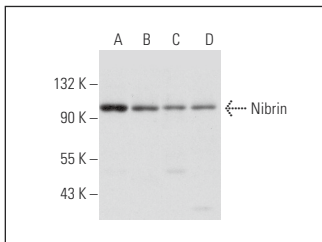
Positive Controls: Jurkat whole cell lysate: sc-2204, HeLa whole cell lysate: sc-2200 or HeLa nuclear extract: sc-2120.

## RECOMMENDED SUPPORT REAGENTS

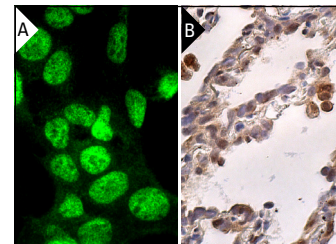
To ensure optimal results, the following support reagents are recommended:

- 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.
- 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



Nibrin (A-2): sc-374168. Western blot analysis of Nibrin expression in HeLa nuclear extract (A) and Jurkat (B), HeLa (C) and Hep G2 (D) whole cell lysates.



Nibrin (A-2): sc-374168. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lung tissue showing nuclear and cytoplasmic staining of pneumocytes and macrophages (B).

## SELECT PRODUCT CITATIONS

1. Bosso, G., et al. 2019. NBS1 interacts with HP1 to ensure genome integrity. *Cell Death Dis.* 10: 951.
2. Swift, M.L., et al. 2021. DSB repair pathway choice is regulated by recruitment of 53BP1 through cell cycle-dependent regulation of Sp1. *Cell Rep.* 34: 108840.

## 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](http://www.scbt.com) for detailed protocols and support products.