SANTA CRUZ BIOTECHNOLOGY, INC.

# p-Nibrin (Ser 343): sc-101771

## BACKGROUND

Nijmegen breakage syndrome (NBS) is characterized by extreme radiation sensitivity, chromosomal instability and cancer. These phenotypes are similar to those of ataxia telangiectasia mutated (ATM) disease, where there is a deficiency in a protein kinase that is activated by DNA damage, indicating that the NBS1 (Nibrin) and ATM proteins may participate in common pathways. Nibrin is specifically phosphorylated in response to γ-radiation, ultraviolet light and exposure to hydroxyurea. The phosphorylation of Nibrin requires catalytically active ATM. ATM physically interacts with and phosphorylates Nibrin on Serine 343 both *in vitro* and *in vivo*. Serine 343 is phosphorylated *in vitro* by ATM and the modification of this residue *in vivo* is essential for the cellular response to DNA damage. This response includes S-phase checkpoint activation, formation of the NBS1/Mrel1/Rad50 nuclear foci and rescue of hypersensitivity to ionizing radiation.

## REFERENCES


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2. Lim, D.S., Kim, S.T., Xu, B., Maser, R.S., Lin, J., Petrini, J.H. and Kastan, M.B. 2000. ATM phosphorylates p95/nbs1 in an S-phase checkpoint pathway. Nature 404: 613-617.
3. Zhao, S., Weng, Y.C., Yuan, S.S., Lin, Y.T., Hsu, H.C., Lin, S.C., Gerbino, E., Song, M.H., Zdzienicka, M.Z., Gatti, R.A., Shay, J.W., Ziv, Y., Shiloh, Y. and Lee, E.Y. 2000. Functional link between ataxia-telangiectasia and Nijmegen breakage syndrome gene products. Nature 405: 473-477.
4. Wu, X., Ranganathan, V., Weisman, D.S., Heine, W.F., Ciccone, D.N., O'Neill, T.B., Crick, K.E., Pierce, K.A., Lane, W.S., Rathbun, G., Livingston, D.M. and Weaver, D.T. 2000. ATM phosphorylation of Nijmegen breakage syndrome protein is required in a DNA damage response. Nature 405: 477-482.
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## CHROMOSOMAL LOCATION

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

## SOURCE

p-Nibrin (Ser 343) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 343 of Nibrin of human origin.

## PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## RESEARCH USE

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

## APPLICATIONS

p-Nibrin (Ser 343) is recommended for detection of Ser 343 phosphorylated Nibrin of human origin by Western Blotting (starting dilution 1:200, 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 Nibrin siRNA (h): sc-36061; and as shRNA Plasmid control antibody for Nibrin shRNA Plasmid (h): sc-36061-SH.

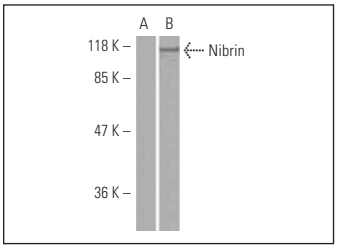
Molecular Weight of p-Nibrin: 95 kDa.

Positive Controls: HeLa + ATM or Jurkat whole cell lysate: sc-2204.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent) 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




Western blot analysis of phosphorylated Nibrin expression in Jurkat whole cell lysates. Antibodies tested include p-Nibrin (Ser 343): sc-101771 preincubated with cognate phosphorylated peptide (**A**) and p-Nibrin (Ser 343): sc-101771 (**B**).

## STORAGE

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

## PROTOCOLS

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