

# Anti-p95/NBS1 antibody [Y112] - BSA and Azide free ab220217


KO VALIDATED

Recombinant

RabMAb

5 Images

## Overview

Product name	Anti-p95/NBS1 antibody [Y112] - BSA and Azide free
Description	Rabbit monoclonal [Y112] to p95/NBS1 - BSA and Azide free
Host species	Rabbit
Tested applications	<b>Suitable for:</b> WB, IHC-P <b>Unsuitable for:</b> Flow Cyt or ICC/IF
Species reactivity	<b>Reacts with:</b> Human <b>Predicted to work with:</b> Mouse, Rat 
Immunogen	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
Positive control	WB: HeLa, Jurkat, Wild-type A431 and HeLa cells lysates. IHC-P: Human testis and skin carcinoma tissues.
General notes	<p>ab220217 is the carrier-free version of <a href="#">ab32074</a>.</p> <p>Our <b>carrier-free</b> antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. The carrier-free buffer and high concentration allow for increased conjugation efficiency.</p> <p>This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.</p> <p>Use our <b>conjugation kits</b> for antibody conjugates that are ready-to-use in as little as 20 minutes with &lt;1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.</p> <p>This product is compatible with the Maxpar<sup>®</sup> Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar<sup>®</sup> is a trademark of Fluidigm Canada Inc.</p> <p>This product is a recombinant monoclonal antibody, which offers several advantages including:</p> <ul style="list-style-type: none"> <li>- High batch-to-batch consistency and reproducibility</li> <li>- Improved sensitivity and specificity</li> <li>- Long-term security of supply</li> <li>- Animal-free production</li> </ul> <p>For more information <a href="#">see here</a>.</p>

Our RabMAb<sup>®</sup> technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to [RabMAb<sup>®</sup> patents](#).

## Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C. Do Not Freeze.
Storage buffer	pH: 7.20 Constituent: PBS
Carrier free	Yes
Purity	Protein A purified
Clonality	Monoclonal
Clone number	Y112
Isotype	IgG

## Applications

**The Abpromise guarantee** Our [Abpromise guarantee](#) covers the use of ab220217 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		Use at an assay dependent concentration. Predicted molecular weight: 85 kDa.
IHC-P		Use at an assay dependent concentration. Perform heat mediated antigen retrieval before commencing with IHC staining protocol. See <a href="#">IHC antigen retrieval protocols</a> .

**Application notes** Is unsuitable for Flow Cyt or ICC/IF.

## Target

**Function** Component of the MRE11-RAD50-NBN (MRN complex) which plays a critical role in the cellular response to DNA damage and the maintenance of chromosome integrity. The complex is involved in double-strand break (DSB) repair, DNA recombination, maintenance of telomere integrity, cell cycle checkpoint control and meiosis. The complex possesses single-strand endonuclease activity and double-strand-specific 3'-5' exonuclease activity, which are provided by MRE11A. RAD50 may be required to bind DNA ends and hold them in close proximity. NBN modulate the DNA damage signal sensing by recruiting PI3/P4-kinase family members ATM, ATR, and probably DNA-PKcs to the DNA damage sites and activating their functions. It can also recruit MRE11 and RAD50 to the proximity of DSBs by an interaction with the histone H2AX. NBN also functions in telomere length maintenance by generating the 3' overhang which serves as a primer for telomerase dependent telomere elongation. NBN is a major player in the control of intra-S-phase checkpoint and there is some evidence that NBN is involved in G1 and G2 checkpoints. The roles of NBS1/MRN encompass DNA damage sensor, signal transducer, and

effector, which enable cells to maintain DNA integrity and genomic stability. Forms a complex with RBBP8 to link DNA double-strand break sensing to resection. Enhances AKT1 phosphorylation possibly by association with the mTORC2 complex.

#### Tissue specificity

Ubiquitous. Expressed at high levels in testis.

#### Involvement in disease

Nijmegen breakage syndrome

Breast cancer

Aplastic anemia

Defects in NBN might play a role in the pathogenesis of childhood acute lymphoblastic leukemia (ALL).

#### Sequence similarities

Contains 1 BRCT domain.

Contains 1 FHA domain.

#### Domain

The FHA and BRCT domains are likely to have a crucial role for both binding to histone H2AFX and for relocalization of MRE11/RAD50 complex to the vicinity of DNA damage.

The C-terminal domain contains a MRE11-binding site, and this interaction is required for the nuclear localization of the MRN complex.

The EEXXXDDL motif at the C-terminus is required for the interaction with ATM and its recruitment to sites of DNA damage and promote the phosphorylation of ATM substrates, leading to the events of DNA damage response.

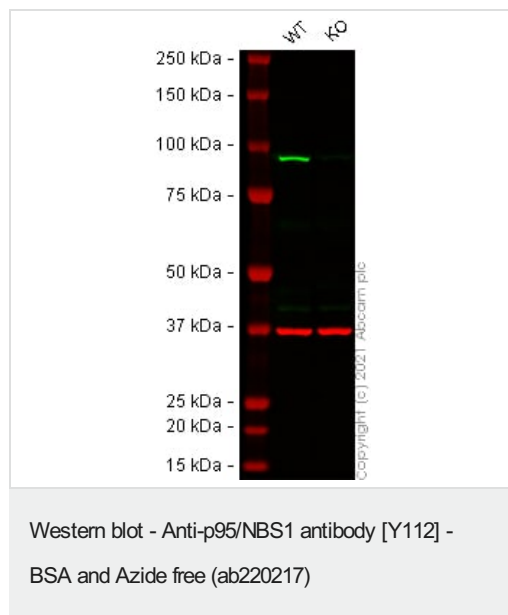
#### Post-translational modifications

Phosphorylated by ATM in response of ionizing radiation, and such phosphorylation is responsible intra-S phase checkpoint control and telomere maintenance.

#### Cellular localization

Nucleus. Nucleus, PML body. Chromosome, telomere. Localizes to discrete nuclear foci after treatment with genotoxic agents.

#### Images



**All lanes :** Anti-p95/NBS1 antibody [Y112] ([ab32074](#)) at 1/1000 dilution

**Lane 1 :** Wild-type A431 cell lysate

**Lane 2 :** NBN knockout A431 cell lysate

Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

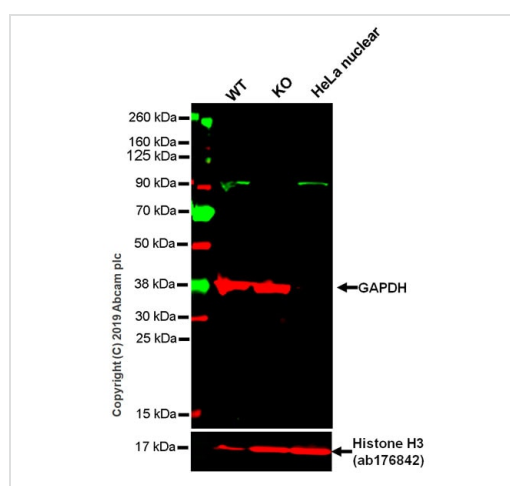
**Predicted band size:** 85 kDa

**Observed band size:** 90 kDa

This data was developed using the same antibody clone in a different buffer formulation ([ab32074](#)).

**Lanes 1 - 2:** Merged signal (red and green). Green - [ab32074](#) observed at 90 kDa. Red - loading control [ab8245](#) (Mouse anti-GAPDH antibody [6C5]) observed at 37 kDa.

**ab32074** was shown to react with p95/NBS1 in wild-type A431 cells in Western blot with loss of signal observed in NBN knockout cell line **ab269506** (NBN knockout cell lysate **ab269668**). Wild-type A431 and NBN knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 5 % milk in TBS-T (0.1 % Tween®) before incubation with **ab32074** and **ab8245** (Mouse anti-GAPDH antibody [6C5]) overnight at 4 °C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (**ab216776**) secondary antibodies at 1 in 20000 dilution for 1 h at room temperature before imaging.



Western blot - Anti-p95/NBS1 antibody [Y112] - BSA and Azide free (ab220217)

**All lanes :** Anti-p95/NBS1 antibody [Y112] (**ab32074**) at 1/1000 dilution

**Lane 1 :** Wild-type HeLa cell lysate

**Lane 2 :** NBN knockout HeLa cell lysate

**Lane 3 :** Wild-type HeLa nuclear cell lysate

Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

**Predicted band size:** 85 kDa

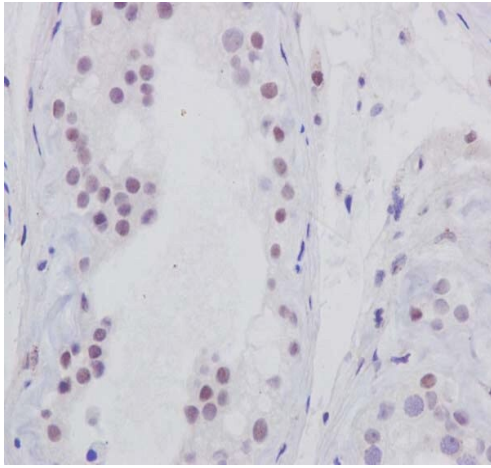
**Observed band size:** 95 kDa

This data was developed using the same antibody clone in a different buffer formulation (**ab32074**).

**Lanes 1-3:** Merged signal (red and green). Green - **ab32074** observed at 95 kDa.

**ab32074** Anti-p95/NBS1 antibody [Y112] was shown to specifically react with p95/NBS1 in wild-type HeLa cells. Loss of signal was observed when knockout cell line **ab261834** (knockout cell lysate **ab257111**) was used. Wild-type and p95/NBS1 knockout samples were subjected to SDS-PAGE. **ab32074**, Anti-GAPDH antibody [6C5] - Cytoplasmic Loading Control (**ab8245**) and Anti-Histone H3 (**ab176842**) - Nuclear Loading Control were incubated overnight at 4°C at 1 in 1000 dilution, 1 in 20000 dilution and 1 in 1000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (**ab216773**), Goat anti-Mouse IgG

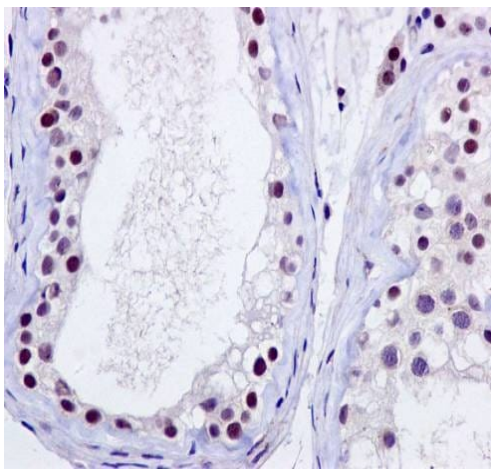
H&L (IRDye® 680RD) preadsorbed ([ab216776](#)) secondary antibodies and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed ([ab216777](#)) at 1 in 10000 dilution for 1 hour at room temperature before imaging.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-p95/NBS1 antibody [Y112] - BSA and Azide free ([ab220217](#))

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human testis tissue labelling p95/NBS1 with unpurified [ab32074](#) at 1/20. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. A prediluted HRP-polymer conjugated anti-rabbit IgG was used as the secondary antibody. Counterstained with hematoxylin.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide ([ab32074](#)).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-p95/NBS1 antibody [Y112] - BSA and Azide free ([ab220217](#))

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human testis tissue labelling p95/NBS1 with purified [ab32074](#) at 1/200. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. A prediluted HRP-polymer conjugated anti-rabbit IgG was used as the secondary antibody. Counterstained with hematoxylin.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide ([ab32074](#)).

### Why choose a recombinant antibody?



**Research with confidence**  
Consistent and reproducible results



**Long-term and scalable supply**  
Recombinant technology



**Success from the first experiment**  
Confirmed specificity



**Ethical standards compliant**  
Animal-free production

Anti-p95/NBS1 antibody [Y112] - BSA and Azide free (ab220217)

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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