

## Product datasheet for **TA336721**

### **p95 NBS1 (NBN) Rabbit Polyclonal Antibody**

#### **Product data:**

<b>Product Type:</b>	Primary Antibodies
<b>Applications:</b>	IHC, WB
<b>Recommended Dilution:</b>	Western Blot: 0.5 ug/ml, Immunohistochemistry: 1:100, Immunohistochemistry-Paraffin: 1:100
<b>Reactivity:</b>	Human, Mouse
<b>Host:</b>	Rabbit
<b>Clonality:</b>	Polyclonal
<b>Immunogen:</b>	Synthetic peptide made to an internal portion of the mouse NBS1 protein (within residues 150-200). [Swiss-Prot# Q9R207]
<b>Formulation:</b>	PBS, 0.05% Sodium Azide. Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
<b>Concentration:</b>	lot specific
<b>Purification:</b>	Immunogen affinity purified
<b>Conjugation:</b>	Unconjugated
<b>Storage:</b>	Store at -20°C as received.
<b>Stability:</b>	Stable for 12 months from date of receipt.
<b>Predicted Protein Size:</b>	97 kDa
<b>Gene Name:</b>	nibrin
<b>Database Link:</b>	<a href="#">NP_002476</a> <a href="#">Entrez Gene 27354 Mouse</a> <a href="#">Entrez Gene 4683 Human</a> <a href="#">O60934</a>



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**Background:**

NBS1 (Nijmegen breakage syndrome protein 1) is a component of MRN complex (Mre11-Rad50-Nbs1) that plays important role in detection and signaling of DNA double strand breaks (DSBs) through acting as DSB sensor, co-activator of DSB-induced cell cycle checkpoint signaling, and as repair-effector in two competing DSB repair pathways: homologous recombination (HR) and non-homologous end-joining (NHEJ). MRN complex also associates with telomeres at the ends of linear chromosomes, where it contributes to their maintenance. NBS1's FHA domain binds phospho-Thr residues in Ser-X-Thr motifs present in DNA damage proteins, including Mdc1 and Ctp1, whereas, BRCT domains of NBS1 bind Ser-X-Thr motifs when Ser residue is phosphorylated. These phospho-dependent interactions are important for recruiting repair and checkpoint proteins to DSB sites and NBS1 is responsible for MRN complex's nuclear translocation. NBS1 itself does not possess enzymatic activity and contributes to DSB repair primarily by mediating protein-protein interactions at DNA breakage sites. The central region of NBS1 1 possesses several SQ motifs that are phosphorylated by ATM kinase via DNA damage response. NBS1's C-terminus contains a domain that interacts with ATM and recruits it to DSBs, and induces apoptosis in response to damage. DSBs can be caused by ionizing radiation, certain chemotherapy drugs, metabolic ROS, as errors during replication, by programmed enzymatic activities during meiosis/V(D)J recombination etc., and if left unrepaired, DSBs can generate chromosomal translocations, aneuploidy and carcinogenesis.

**Synonyms:**

AT-V1; AT-V2; ATV; NBS; NBS1; P95

**Note:**

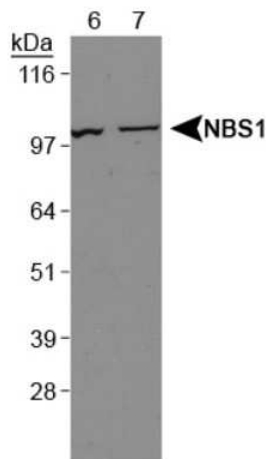
This NBS1 antibody is useful for Immunohistochemistry on paraffin embedded sections and Western blot, where a band is seen at ~97 kDa.

**Protein Families:**

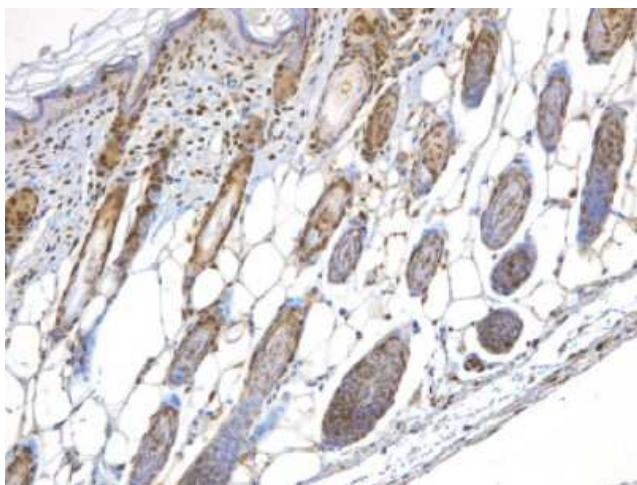
Druggable Genome

**Protein Pathways:**

Homologous recombination

**Product images:**

Western Blot: Nbs1 Antibody TA336721 - Western Blot analysis of Nbs1 on NIH/3T3 (Lane 6) and HeLa whole cell extract (Lane 7) with Nbs1 Antibody TA336721. Observed molecular weight at ~99 kDa.



Immunohistochemistry-Paraffin: Nbs1 Antibody TA336721 - Staining of paraffin-embedded mouse skin with Nbs1 Antibody TA336721.