

**Anti-53BP1 Antibody**  
**Catalog # ABO11284****Specification**

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**Anti-53BP1 Antibody - Product Information**

Application	WB, IHC-P, ICC
Primary Accession	<a href="#">Q12888</a>
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

**Description**

Rabbit IgG polyclonal antibody for Tumor suppressor p53-binding protein 1 (TP53BP1) detection. Tested with WB, IHC-P, ICC in Human; Mouse; Rat.

**Reconstitution**

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

**Anti-53BP1 Antibody - Additional Information**

**Gene ID** 7158

**Other Names**

Tumor suppressor p53-binding protein 1, 53BP1, p53-binding protein 1, p53BP1, TP53BP1

**Calculated MW**

213574 MW KDa

**Application Details**

Immunocytochemistry , 0.5-1 µg/ml, Human, Mouse, Rat  
Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Mouse, Rat, By Heat  
Western blot, 0.1-0.5 µg/ml, Human, Mouse, Rat

**Subcellular Localization**

Nucleus. Chromosome, centromere, kinetochore. Associated with kinetochores. Both nuclear and cytoplasmic in some cells. Recruited to sites of DNA damage, such as double strand breaks. H4K20me2 is required for efficient localization to double strand breaks and removal of proteins that have a high affinity for H4K20me2 such as L3MBTL1 and KDM4A is needed.

**Protein Name**

Tumor suppressor p53-binding protein 1

**Contents**

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na<sub>2</sub>HPO<sub>4</sub>, 0.05mg Thimerosal, 0.05mg NaN<sub>3</sub>.

**Immunogen**

A synthetic peptide corresponding to a sequence at the C-terminus of human 53BP1(1955-1972aa ERIGFKQHPKYKHDYVSH), identical to the related mouse sequence.

**Purification**

Immunogen affinity purified.

**Cross Reactivity**

No cross reactivity with other proteins

**Storage**

**At -20°C for one year. After r°Constitution, at 4°C for one month. It°Can also be aliquotted and stored frozen at -20°C for a longer time.Avoid repeated freezing and thawing.**

**Sequence Similarities**

Contains 2 BRCT domains.

**Anti-53BP1 Antibody - Protein Information**

**Name** TP53BP1 ([HGNC:11999](#))

**Function**

Double-strand break (DSB) repair protein involved in response to DNA damage, telomere dynamics and class-switch recombination (CSR) during antibody genesis (PubMed:<a href="http://www.uniprot.org/citations/12364621" target="\_blank">12364621</a>, PubMed:<a href="http://www.uniprot.org/citations/17190600" target="\_blank">17190600</a>, PubMed:<a href="http://www.uniprot.org/citations/21144835" target="\_blank">21144835</a>, PubMed:<a href="http://www.uniprot.org/citations/22553214" target="\_blank">22553214</a>, PubMed:<a href="http://www.uniprot.org/citations/23333306" target="\_blank">23333306</a>, PubMed:<a href="http://www.uniprot.org/citations/27153538" target="\_blank">27153538</a>, PubMed:<a href="http://www.uniprot.org/citations/28241136" target="\_blank">28241136</a>, PubMed:<a href="http://www.uniprot.org/citations/31135337" target="\_blank">31135337</a>, PubMed:<a href="http://www.uniprot.org/citations/37696958" target="\_blank">37696958</a>). Plays a key role in the repair of double-strand DNA breaks (DSBs) in response to DNA damage by promoting non-homologous end joining (NHEJ)-mediated repair of DSBs and specifically counteracting the function of the homologous recombination (HR) repair protein BRCA1 (PubMed:<a href="http://www.uniprot.org/citations/22553214" target="\_blank">22553214</a>, PubMed:<a href="http://www.uniprot.org/citations/23333306" target="\_blank">23333306</a>, PubMed:<a href="http://www.uniprot.org/citations/23727112" target="\_blank">23727112</a>, PubMed:<a href="http://www.uniprot.org/citations/27153538" target="\_blank">27153538</a>, PubMed:<a href="http://www.uniprot.org/citations/31135337" target="\_blank">31135337</a>). In response to DSBs, phosphorylation by ATM promotes interaction with RIF1 and dissociation from NUDT16L1/TIRR, leading to recruitment to DSBs sites (PubMed:<a href="http://www.uniprot.org/citations/28241136" target="\_blank">28241136</a>). Recruited to DSBs sites by recognizing and binding histone H2A monoubiquitinated at 'Lys-15' (H2AK15Ub) and histone H4 dimethylated at 'Lys-20' (H4K20me2), two histone marks that are present at DSBs sites (PubMed:<a href="http://www.uniprot.org/citations/17190600" target="\_blank">17190600</a>, PubMed:<a href="http://www.uniprot.org/citations/23760478" target="\_blank">23760478</a>, PubMed:<a href="http://www.uniprot.org/citations/27153538" target="\_blank">27153538</a>, PubMed:<a href="http://www.uniprot.org/citations/28241136" target="\_blank">28241136</a>). Required for immunoglobulin class- switch recombination (CSR) during antibody genesis, a process that involves the generation of DNA DSBs (PubMed:<a href="http://www.uniprot.org/citations/23345425" target="\_blank">23345425</a>). Participates in the repair and the orientation of the broken DNA ends during CSR (By similarity). In contrast, it is not required for classic NHEJ and V(D)J recombination (By similarity). Promotes NHEJ of dysfunctional telomeres via interaction with PAXIP1 (PubMed:<a href="http://www.uniprot.org/citations/23727112" target="\_blank">23727112</a>).

### Cellular Location

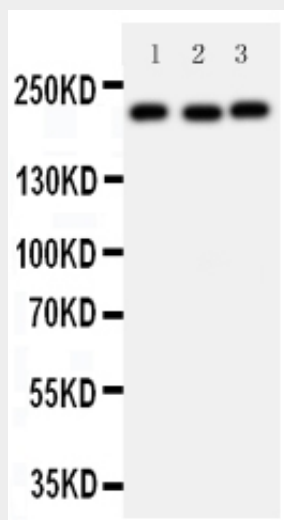
Nucleus. Chromosome. Chromosome, centromere, kinetochore {ECO:0000250|UniProtKB:P70399}. Note=Localizes to the nucleus in absence of DNA damage (PubMed:28241136). Following DNA damage, recruited to sites of DNA damage, such as double strand breaks (DSBs): recognizes and binds histone H2A monoubiquitinated at 'Lys-15' (H2AK15Ub) and histone H4 dimethylated at 'Lys-20' (H4K20me2), two histone marks that are present at DSBs sites (PubMed:17190600, PubMed:23333306, PubMed:23760478, PubMed:24703952, PubMed:28241136, PubMed:31135337, PubMed:37696958). Associated with kinetochores during mitosis (By similarity). {ECO:0000250|UniProtKB:P70399, ECO:0000269|PubMed:17190600, ECO:0000269|PubMed:23333306, ECO:0000269|PubMed:23760478, ECO:0000269|PubMed:28241136, ECO:0000269|PubMed:37696958}

### Anti-53BP1 Antibody - Protocols

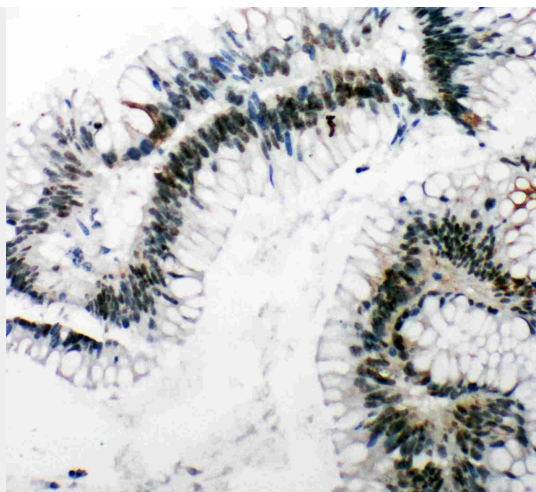
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

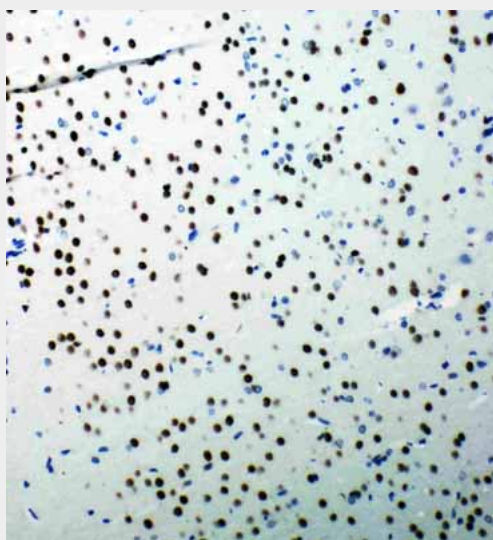
### Anti-53BP1 Antibody - Images



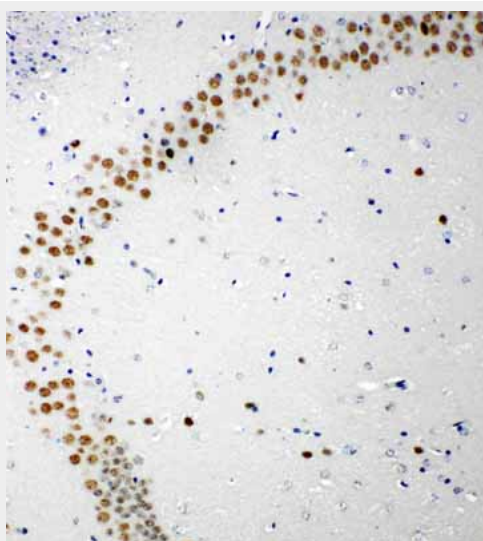
Anti-53BP1 antibody, ABO11284, Western blotting Lane 1: 293T Cell Lysate Lane 2: U2OS Cell Lysate Lane 3: HEPA Cell Lysate



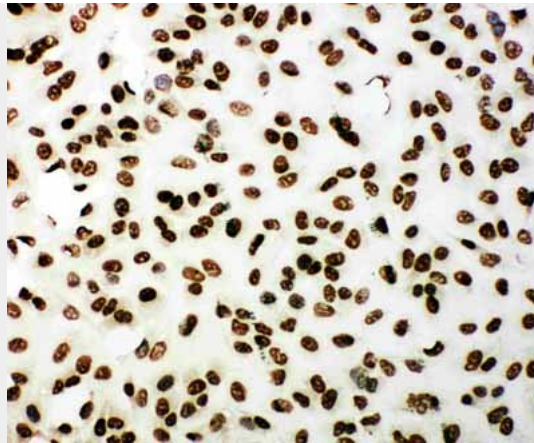
Anti-53BP1 antibody, ABO11284, IHC(P)IHC(P): Human Intestinal Cancer Tissue



Anti-53BP1 antibody, ABO11284, IHC(P)IHC(P): Rat Brain Tissue



Anti-53BP1 antibody, ABO11284, IHC(P)IHC(P): Mouse Brain Tissue



Anti-53BP1 antibody, ABO11284, ICCICC: A549 Cell

### **Anti-53BP1 Antibody - Background**

TP53BP1 (Tumor Protein p53-Binding Protein 1), also called 53BP1, is a protein that in humans is encoded by the TP53BP1 gene. Iwabuchi et al. (1998) mapped the TP53BP1 gene to 15q15-q21 by FISH. Iwabuchi et al. (1994) showed that TP53BP1 binds to the conformationally sensitive central domain of wildtype p53 but not to mutant p53 in vitro. Immunoblot analysis by Iwabuchi et al. (1998) showed that expression of TP53BP1 or TP53BP2 enhances the transactivation function of p53 and induces the expression of p21 (CDKN1A). Wang et al. (2002) used small interfering RNA directed against TP53BP1 in mammalian cells to demonstrate that TP53BP1 is a key transducer of the DNA damage checkpoint signal. TP53BP1 was required for p53 accumulation, G2/M checkpoint arrest, and the intra-S-phase checkpoint in response to ionizing radiation.