

# Recombinant Anti-53BP1 Rabbit mAb

Catalog # AP95038

## Product Information

|                   |                        |
|-------------------|------------------------|
| Application       | WB, IHC, FC, IF/IC     |
| Primary Accession | <a href="#">Q12888</a> |
| Reactivity        | Human, Mouse, Rat      |
| Host              | Rabbit                 |
| Clonality         | Monoclonal             |
| Calculated MW     | 213574                 |

## Additional Information

|                    |                                                                                                                         |
|--------------------|-------------------------------------------------------------------------------------------------------------------------|
| Gene ID            | 7158                                                                                                                    |
| Other Names        | Tumor suppressor p53-binding protein 1; 53BP1; p53-binding protein 1; p53BP1                                            |
| Target/Specificity | KLH-conjugated synthetic peptide encompassing a sequence within human 53BP1 protein. The exact sequence is proprietary. |
| Dilution           | WB~~WB (1/500 - 1/1000) IHC~~1:100~500 FC~~1:10~50 IF/IC~~N/A                                                           |
| Format             | Liquid in PBS, pH 7.3, 50% glycerol, 0.05% BSA, and 0.05% Proclin300.                                                   |
| Storage            | Store at -20 °C.Stable for 12 months from date of receipt                                                               |

## Protein Information

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name     | TP53BP1 ( <a href="#">HGNC:11999</a> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 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="#">12364621</a> , PubMed: <a href="#">17190600</a> , PubMed: <a href="#">21144835</a> , PubMed: <a href="#">22553214</a> , PubMed: <a href="#">23333306</a> , PubMed: <a href="#">27153538</a> , PubMed: <a href="#">28241136</a> , PubMed: <a href="#">31135337</a> , PubMed: <a href="#">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="#">22553214</a> , PubMed: <a href="#">23333306</a> , PubMed: <a href="#">23727112</a> , PubMed: <a href="#">27153538</a> , PubMed: <a href="#">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="#">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="#">17190600</a> , PubMed: <a href="#">23760478</a> , PubMed: <a href="#">27153538</a> , |

PubMed:[28241136](#)). Required for immunoglobulin class- switch recombination (CSR) during antibody genesis, a process that involves the generation of DNA DSBs (PubMed:[23345425](#)). 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:[23727112](#)).

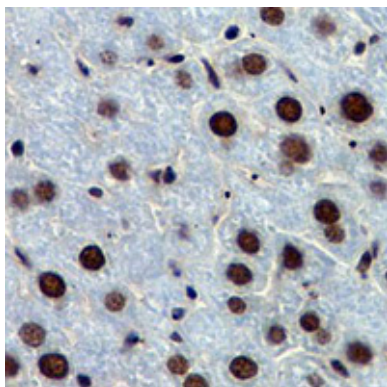
## Cellular Location

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}

## Images

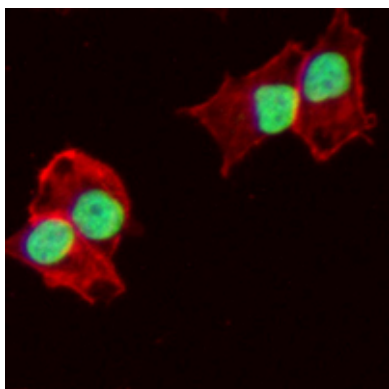


Western blot analysis of 53BP1 expression in HeLa (A) whole cell lysates. (Predicted band size: 214 kD; Observed band size: 450 kD)



Immunohistochemical analysis of 53BP1 staining in mouse liver formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

Immunofluorescent analysis of 53BP1 staining in HeLa cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a humidified chamber. Cells were washed with PBST and incubated with an AF488-conjugated secondary antibody (green) in PBS at



room temperature in the dark. Phalloidin - AF594 was used to stain Actin filaments (red). DAPI was used to stain the cell nuclei (blue).

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