10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-53BP1 Antibody

Catalog # ABO11284

Product Information

Application	WB, IHC-P, ICC
Primary Accession	Q12888
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.

Additional Information

Gene ID	7158
Other Names	Tumor suppressor p53-binding protein 1, 53BP1, p53-binding protein 1, p53BP1, TP53BP1
Calculated MW	213574
Application Details	Immunocytochemistry , 0.5-1 □g/ml, Human, Mouse, Rat Immunohistochemistry(Paraffin-embedded Section), 0.5-1 □g/ml, Human, Mouse, Rat, By Heat Western blot, 0.1-0.5 □g/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 stand 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.
Source	Eukaryota
Protein Name	Tumor suppressor p53-binding protein 1
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3.
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.

Protein Information

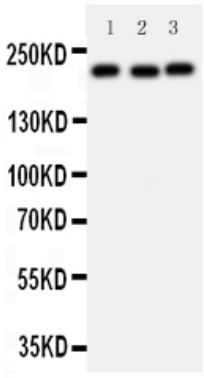
Name	TP53BP1 (HGNC:11999)
Function	Double-strand break (DSB) repair protein involved in response to DNA damage, telomere dynamics and class-switch recombination (CSR) during antibody genesis (PubMed:12364621, PubMed:17190600, PubMed:21144835, PubMed:22553214, PubMed:23333306, PubMed:27153538, PubMed:28241136, PubMed:31135337, PubMed:37696958). 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:22553214, PubMed:23333306, PubMed:23727112, PubMed:27153538, PubMed:31135337). In response to DSBs, phosphorylation by ATM promotes interaction with RIF1 and dissociation from NUDT16L1/TIRR, leading to recruitment to DSBs sites (PubMed:28241136). 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:17190600, PubMed:23760478, PubMed:27153538, 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}

Background

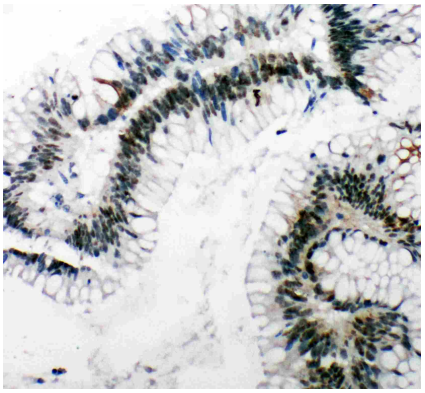
TP53BP1(Tumor Protein p53-Binding Protein 1), also called 53BP1, is a protein that in humans is encoded by the TP53BP1 gene. Iwabuchi et al.(1998) mapped the TP53BP1 gene to 15q15-q21 by FISH. Iwabuchi et al.(1994) showed that TP53BP1 binds to the conformationally sensitive central domain of wildtype 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.

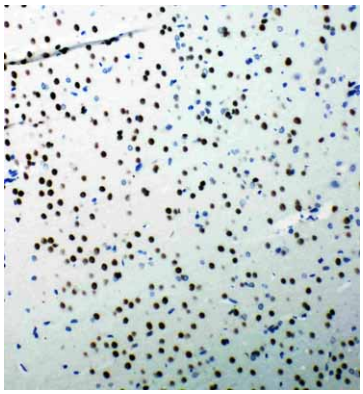
Images



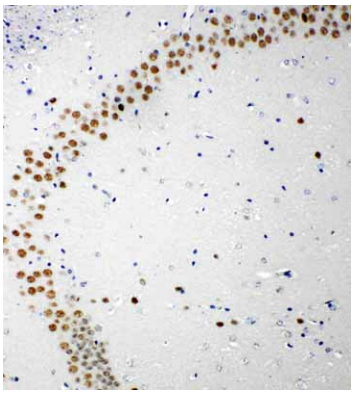
Anti-53BP1 antibody, ABO11284, Western blottingLane 1: 293T Cell LysateLane 2: U20S Cell LysateLane 3: HEPA Cell Lysate



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

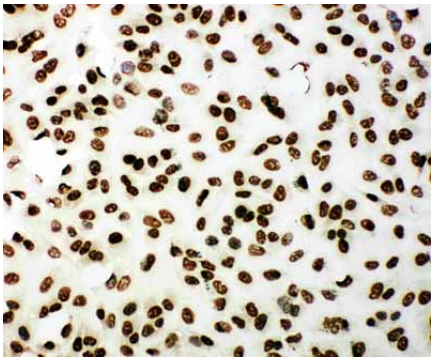


Anti-53BP1 antibody, ABO11284, IHC(P)IHC(P): Rat Brain Tissue



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

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



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