

Rabbit 53BP1 Polyclonal Antibody | anti-53BP1 antibody

Phospho-53BP1 (Ser25/Ser29) Antibody

CATALOG # AAA329325	HOST Rabbit	REACTIVITY Human, Mouse, Rat, Monkey	APPLICATIONS ELISA, Immunohistochemistry, Western Blot
-------------------------------	-----------------------	--	--

PRODUCT SYNONYMS

53BP1; Polyclonal Antibody; Phospho-53BP1 (Ser25/Ser29) Antibody; 53 BP1; FLJ41424; MGC138366; p202; p53 binding protein 1; p53 BP1; p53-binding protein 1; p53BP1; TP53 BP1; TP53B_HUMAN; Tp53bp1; TRP53 BP1; Tumor protein 53 binding protein 1; Tumor protein p53 binding protein 1; Tumor suppressor p53 binding protein 1; Tumor suppressor p53-binding protein 1; anti-53BP1 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat, Monkey
Clonality	Polyclonal
Isotype	Rabbit IgG
Specificity	Phospho-53BP1 (Ser25/Ser29) Antibody detects endogenous levels of 53BP1 only when phosphorylated at Ser25/29.
Purity/Purification	The antibody is from purified rabbit serum by affinity purification via sequential chromatography on phospho-peptide and non-phospho-peptide affinity columns.
Form/Format	Liquid. Rabbit IgG in phosphate buffered saline, pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Applicable Applications for anti-53BP1 antibody	ELISA (Peptide ELISA), IHC (Immunohistochemistry), WB (Western Blot)
Immunogen	A synthesized peptide derived from human 53BP1 around the phosphorylation site of Ser25/29.
Conjugation	Unconjugated
Fragment	Fab fragment
Post Translational Modifications	Asymmetrically dimethylated on Arg residues by PRMT1. Methylation is required for DNA binding. Phosphorylated at basal level in the absence of DNA damage. Phosphorylated by ATM in response to DNA damage: phosphorylation at different sites promotes interaction with different set of proteins: phosphorylation at the N-terminus by ATM (residues from 6-178) promotes interaction with PAXIP1 and non-homologous end joining (NHEJ) of dysfunctional telomeres. Phosphorylation by ATM at residues that are located more C-terminus (residues 300-650) leads to promote interaction with RIF1. Interaction with RIF1 leads to disrupt interaction with NUDT16L1/TIRR. Phosphorylation at Thr-1609 and Ser-1618 in the UDR motif blocks interaction with H2AK15ub. Dephosphorylated by PPP4C. Hyperphosphorylation during mitosis correlates with its exclusion from chromatin and DNA lesions. Hyperphosphorylated in an ATR-dependent manner in response to DNA damage induced by UV irradiation. Dephosphorylated by PPP5C.

Subunit Structure	Homoligomer. Interacts with p53/TP53 (via the central domain). Interacts with DCLRE1C. Interacts with histone H2AX and this requires phosphorylation of H2AX on 'Ser-139'. Interacts with histone H4 that has been dimethylated at 'Lys-20' (H4K20me2). Has low affinity for histone H4 containing monomethylated 'Lys-20' (H4K20me1). Does not bind histone H4 containing unmethylated or trimethylated 'Lys-20' (H4K20me3). Has low affinity for histone H3 that has been dimethylated on 'Lys-79'. Has very low affinity for histone H3 that has been monomethylated on 'Lys-79' (in vitro). Does not bind unmethylated histone H3. Interacts with histone H2A monoubiquitinated at 'Lys-15' (H2AK15Ub). Interacts with PWWP3A/EXPAND1. Interacts with CHEK2; modulates CHEK2 phosphorylation at 'Thr-68' in response to infrared. Interacts with MSL1; this interaction may be required for MSL1 DNA repair activity, but not for histone acetyltransferase activity. Interacts (when phosphorylated by ATM) with RIF1. Interacts (via the Tudor-like domain) with NUDT16L1/TIRR; interaction masks the Tudor-like domain and prevents recruitment to chromatin. Interacts with PAXIP1. Interacts with IFI202A (By similarity). Interacts with SHLD2.
Similarity	The Tudor-like region mediates binding to histone H4 dimethylated at 'Lys-20' (H4K20me2) (PubMed:17190600). Interaction with NUDT16L1/TIRR masks the Tudor-like domain and prevents recruitment to chromatin (PubMed:28241136).The UDR (ubiquitin-dependent recruitment) motif specifically recognizes and binds histone H2A monoubiquitinated at 'Lys-15' (H2AK15ub) (PubMed:23760478, PubMed:24703952). Phosphorylation of the UDR blocks interaction with H2AK15ub (PubMed:24703952).
Subcellular Location	Nucleus. Chromosome. Chromosome>Centromere>Kinetochore. Note: Localizes to the nucleus in absence of DNA damage (PubMed:28241136). Following DNA damage, recruited to sites of DNA damage, such as double stand 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:23333306, PubMed:23760478, PubMed:24703952, PubMed:28241136, PubMed:17190600). Associated with kinetochores during mitosis (By similarity).
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.

IMAGES



IHC (Immunohistochemistry)
At 1/100 staining Human colorectal cancer by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



IHC (Immunohistochemistry)
At 1/100 staining Mouse brain tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



IHC (Immunohistochemisry)
At 1/100 staining Rat heart tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



IHC (Immunhiostchemistry)
Staining Rat brain tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



WB (Western Blot)
Western blot analysis of extracts from various samples, using Phospho-53BP1 (Ser25/Ser29) Antibody.Lane 1: Hela cells(serum starvation treatment), blocked with antigen-specific peptides,Lane 2: Hela cells(serum starvation treatment),Lane 3: VERO cells(serum starvation treatment).

ADDITIONAL INFORMATION

Related Product Information for anti-53BP1 antibody	Double-strand break (DSB) repair protein involved in response to DNA damage, telomere dynamics and class-switch recombination (CSR) during antibody genesis. 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. In response to DSBs, phosphorylation by ATM promotes interaction with RIF1 and dissociation from NUDT16L1/TIRR, leading to recruitment to DSBs sites. 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. Required for immunoglobulin class-switch recombination (CSR) during antibody genesis, a process that involves the generation of DNA DSBs. Participates to 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.
---	---

NCBI AND UNIPROT INFORMATION

NCBI GI #	213972634
NCBI GeneID	7158
NCBI Accession #	NP_001135451.1
NCBI GenBank Nucleotide #	NM_001141979.1
UniProt Accession #	Q12888; Q2M1Z7; Q4LE46; Q5FWZ3; Q7Z3U4
Molecular Weight	213,574 Da
NCBI Official Full Name	tumor suppressor p53-binding protein 1 isoform 2
NCBI Official Synonym Full Names	tumor protein p53 binding protein 1
NCBI Official Symbol	TP53BP1
NCBI Official Synonym Symbols	p202; 53BP1
NCBI Protein Information	tumor suppressor p53-binding protein 1; p53BP1; tumor protein 53-binding protein, 1; tumor protein p53-binding protein, 1
UniProt Protein Name	Tumor suppressor p53-binding protein 1
UniProt Gene Name	TP53BP1
UniProt Synonym Gene Names	53BP1; p53-binding protein 1; p53BP1
UniProt Entry Name	TP53B_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.