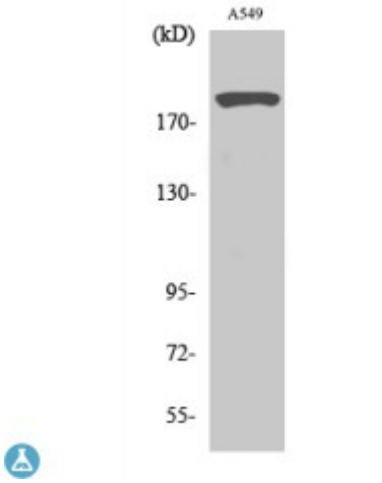
Anti-53BP1 antibody



Description	Rabbit polyclonal to 53BP1.

Model	STJ91389
Host	Rabbit
Reactivity	Human, Mouse, Rat
Applications	ELISA, IF, IHC, WB
Immunogen	Synthesized peptide derived from human 53BP1 around the non-phosphorylation site of S6.
Immunogen Region	1-80 aa
Gene ID	7158
Gene Symbol	TP53BP1
Dilution range	WB 1:500-1:2000IHC 1:100-1:300IF 1:200-1:1000ELISA 1:10000
Specificity	53BP1 Polyclonal Antibody detects endogenous levels of 53BP1 protein.
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Note	For Research Use Only (RUO).
Protein Name	TP53-binding protein 1 53BP1 p53-binding protein 1 p53BP1
Molecular Weight	213 kDa
Clonality	Polyclonal
Conjugation	Unconjugated

Isotype	IgG
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Concentration	1 mg/ml
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:11999OMIM:605230
Alternative Names	TP53-binding protein 1 53BP1 p53-binding protein 1 p53BP1
Function	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 . In contrast, it is not required for classic NHEJ and V(D)J recombination . Promotes NHEJ of dysfunctional telomeres via interaction with PAXIP1 .
Sequence and Domain Family	The Tudor-like region mediates binding to histone H4 dimethylated at 'Lys-20' (H4K20me2) . Interaction with NUDT16L1/TIRR masks the Tudor-like domain and prevents recruitment to chromatin . The UDR (ubiquitin-dependent recruitment) motif specifically recognizes and binds histone H2A monoubiquitinated at 'Lys-15' (H2AK15ub) . Phosphorylation of the UDR blocks interaction with H2AK15ub .
Cellular Localization	Nucleus Chromosome Chromosome, centromere, kinetochore. Localizes to the nucleus in absence of DNA damage . 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 . Associated with kinetochores during mitosis .
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 .