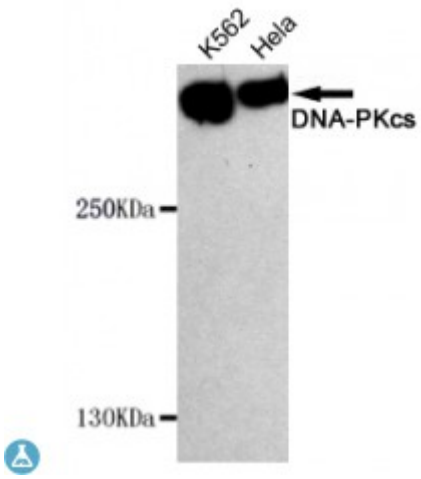
Anti-DNA-PKcs antibody



Description	Mouse monoclonal to DNA-PKcs.

Model	STJ99134
Host	Mouse
Reactivity	Human
Applications	ELISA, WB
Immunogen	Purified recombinant human DNA-PKcs protein fragments expressed in E.coli
Gene ID	5591
Gene Symbol	PRKDC
Dilution range	WB 1:500-2000ELISA 1:10000-20000
Specificity	This antibody detects endogenous levels of DNA-PKcs and does not cross-react with related proteins.
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Clone ID	6D1-C11-F10
Note	For Research Use Only (RUO).
Protein Name	DNA-dependent protein kinase catalytic subunit DNA-PK catalytic subunit DNA-PKcs DNPK1 p460
Molecular Weight	450kDa
Clonality	Monoclonal
Conjugation	Unconjugated

Isotype	IgG1
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:9413OMIM:600899
Alternative Names	DNA-dependent protein kinase catalytic subunit DNA-PK catalytic subunit DNA-PKcs DNPK1 p460
Function	Serine/threonine-protein kinase that acts as a molecular sensor for DNA damage. Involved in DNA non-homologous end joining (NHEJ) required for double-strand break (DSB) repair and V(D)J recombination. Must be bound to DNA to express its catalytic properties. Promotes processing of hairpin DNA structures in V(D)J recombination by activation of the hairpin endonuclease artemis (DCLRE1C). The assembly of the DNA-PK complex at DNA ends is also required for the NHEJ ligation step. Required to protect and align broken ends of DNA. May also act as a scaffold protein to aid the localization of DNA repair proteins to the site of damage. Found at the ends of chromosomes, suggesting a further role in the maintenance of telomeric stability and the prevention of chromosomal end fusion. Also involved in modulation of transcription. Recognizes the substrate consensus sequence [ST]-Q. Phosphorylates 'Ser-139' of histone variant H2AX/H2AFX, thereby regulating DNA damage response mechanism. Phosphorylates DCLRE1C, c-Abl/ABL1, histone H1, HSPCA, c-jun/JUN, p53/TP53, PARP1, POU2F1, DHX9, SRF, XRCC1, XRCC1, XRCC4, XRCC5, XRCC6, WRN, MYC and RFA2. Can phosphorylate C1D not only in the presence of linear DNA but also in the presence of supercoiled DNA. Ability to phosphorylate p53/TP53 in the presence of supercoiled DNA is dependent on C1D. Contributes to the determination of the circadian period length by antagonizing phosphorylation of CRY1 'Ser-588' and increasing CRY1 protein stability, most likely through an indirect machanism. Interacts with CRY1 and CRY2; negatively regulates CRY1 phosphorylation.
Cellular Localization	Nucleus Nucleus, nucleolus
Post-translational Modifications	Autophosphorylated on Ser-2056, Thr-2609, Thr-2638 and Thr-2647. Ser-2056 and Thr-2609 are DNA damage-inducible phosphorylation sites (inducible with ionizing radiation, IR) dephosphorylated by PPP5C. Autophosphorylation induces a conformational change that leads to remodeling of the DNA-PK complex, requisite for efficient end processing and DNA repair. S-nitrosylated by GAPDH. Polyubiquitinated by RNF144A, leading to proteasomal degradation.