

Cat. No:	MABN05886
Conjugate:	Unconjugated
Size:	100µL
Clone:	Monoclonal
Concentration:	1mg/ml
Host:	Rabbit
Isotype:	IgG
Immunogen:	A synthetic phosphopeptide corresponding to residues surrounding Ser2056 of human DNA PKcs
Reactivity:	Human
Applications:	WB 1:1000-1:2000,IHC 1:50-1:200,ICC/IF 1:20-1:100
Molecular Weight:	469kDa
Purification:	Affinity purification
Synonyms:	DNA- PKcs, DNA-dependent protein kinase catalytic subunit, DNPK1, EC 2.7.11.1, P460, PRKD, PRKDC, XRCC7, kinase DNA-PK

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Background:

The PRKDC gene encodes the catalytic subunit of a nuclear DNA-dependent serine/threonine protein kinase (DNA-PK). The second component is the autoimmune antigen Ku (MIM 152690), which is encoded by the G22P1 gene on chromosome 22q. On its own, the catalytic subunit of DNA-PK is inactive and relies on the G22P1 component to direct it to the DNA and trigger its kinase activity; PRKDC must be bound to DNA to express its catalytic properties. Serine/threonine-protein kinase that acts as a molecular sensor for DNA damage (PubMed:11955432, PubMed:12649176, PubMed:14734805, PubMed:33854234). Involved in DNA non-homologous end joining (NHEJ) required for double-strand break (DSB) repair and V(D)J recombination (PubMed:11955432, PubMed:12649176, PubMed:14734805, PubMed:33854234). Must be bound to DNA to express its catalytic properties (PubMed:11955432). Promotes processing of hairpin DNA structures in V(D)J recombination by activation of the hairpin endonuclease artemis (DCLRE1C) (PubMed:11955432). Recruited by XRCC5 and XRCC6 to DNA ends and is required to (1) protect and align broken ends of DNA, thereby preventing their degradation, (2) and sequester the DSB for repair by NHEJ (PubMed:15574326, PubMed:11955432, PubMed:12649176, PubMed:14734805, PubMed:33854234). Act as a scaffold protein to aid the localization of DNA repair proteins to the site of damage (PubMed:15574326, PubMed:11955432, PubMed:12649176, PubMed:14734805). The assembly of the DNA-PK complex at DNA ends is also required for the NHEJ ligation step (PubMed:15574326, PubMed:11955432, PubMed:12649176, PubMed:14734805). Found at the ends of chromosomes, suggesting a further role in the maintenance of telomeric stability and the prevention of chromosomal end fusion (By similarity). Also involved in modulation of transcription (PubMed:15574326, PubMed:11955432, PubMed:12649176, PubMed:14734805). As part of the DNA-PK complex, involved in the early steps of ribosome assembly by promoting the processing of precursor rRNA into mature 18S rRNA in the small-subunit processome (PubMed:32103174). Binding to U3 small nucleolar RNA, recruits

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**Product Data Sheet:
Phospho-DNA PKcs (S2056) (5N13) Rabbit
Monoclonal Antibody**

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