

# DNA-PK (Phospho Thr2609) rabbit pAb

Cat No.:ES20143

For research use only

## Overview

Product Name	DNA-PK (Phospho Thr2609) rabbit pAb
Host species	Rabbit
Applications	WB; ELISA
Species Cross-Reactivity	Human;Mouse
Recommended dilutions	WB 1:1000-2000 ELISA 1:5000-20000
Immunogen	Synthesized peptide derived from human DNA-PK (Phospho Thr2609)
Specificity	This antibody detects endogenous levels of Human,Mouse DNA-PK (Phospho Thr2609)
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Storage	Store at -20℃. Avoid repeated freeze-thaw cycles.
Protein Name	DNA-PK (Phospho Thr2609)
Gene Name	PRKDC HYRC HYRC1
Cellular localization	Nucleus . Nucleus, nucleolus .
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Clonality	Polyclonal
Concentration	1 mg/ml
Observed band	450kD
Human Gene ID	5591
Human Swiss-Prot Number	P78527
Alternative Names	DNA-dependent protein kinase catalytic subunit (DNA-PK catalytic subunit;DNA-PKcs;EC 2.7.11.1;DNPK1;p460)
Background	catalytic activity:ATP + a protein = ADP + a phosphoprotein.,enzyme regulation:Inhibited by wortmannin. Activity of the enzyme seems to be attenuated by autophosphorylation.,function:Serine/threonine-protein kinase that acts as a molecular sensor for DNA damage.





Involved in DNA nonhomologous 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, c-myc/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 TP53/p53 in the presence of supercoiled DNA is dependent on C1D. PTM: Phosphorylated upon DNA damage, probably by ATM or ATR. Autophosphorylated on Thr-2609, Thr-2638 and Thr-2647. Thr-2609 is a DNA damage-inducible phosphorylation site (inducible with ionizing radiation, IR). Autophosphorylation induces a conformational change that leads to remodeling of the DNA-PK complex, requisite for efficient end processing and DNA repair. similarity: Belongs to the PI3/PI4-kinase family. similarity: Contains 1 FAT domain. similarity: Contains 1 FATC domain. similarity: Contains 1 PI3K/PI4K domain. similarity: Contains 2 HEAT repeats. similarity: Contains 3 TPR repeats. subunit: DNA-PK is a heterotrimer of PRKDC and the Ku p70-p86 (XRCC6-XRCC5) dimer. Formation of this complex may be promoted by interaction with ILF3. Associates with the DNA-bound Ku heterodimer, but it





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can also bind to and be activated by free DNA. Interacts with DNA-PKcs-interacting protein (KIP) with the region upstream the kinase domain. PRKDC alone also interacts with and phosphorylates DCLRE1C, thereby activating the latent endonuclease activity of this protein. Interacts with C1D.,



+86-27-59760950

[ELKbio@ELKbiotech.com](mailto:ELKbio@ELKbiotech.com)

[www.elkbiotech.com](http://www.elkbiotech.com)

23-2, No.388 Gaoxin 2nd Road, Wuhan East Lake Hi-tech Development Zone, Hubei, P.R.C.