DNA-PK (Phospho Thr2609) mouse mAb

Catalog No	BYmab-00287
Isotype	IgG
Reactivity	Human;Mouse
Applications	WB
Gene Name	PRKDC HYRC HYRC1
Protein Name	DNA-PK (Phospho Thr2609)
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.
Source	Monoclonal, Mouse,IgG
Purification	The antibody was affinity-purified from mouse antiserum by affinity-chromatography using epitope-specific immunogen.
Dilution	WB 1:500-2000
Concentration	1 mg/ml
Purity	≥90%
Storage Stability	-20°C/1 year
Synonyms	DNA-dependent protein kinase catalytic subunit (DNA-PK catalytic subunit;DNA-PKcs;EC 2.7.11.1;DNPK1;p460)
Observed Band	450kD
Cell Pathway	Nucleus . Nucleus, nucleolus .
Tissue Specificity	
Function	telomere maintenance, non-recombinational repair, somitogenesis, cell activation, somatic diversification of immune receptors, hemopoietic progenitor cell differentiation, immune effector process, lymphoid progenitor cell differentiation,B cell lineage commitment, pro-B cell differentiation, T cell lineage commitment, immunoglobulin production, production of molecular mediator of immune response, immune system development, leukocyte differentiation, somatic diversification of immune receptors via germline recombination within a single locus, somatic diversification of T cell receptor genes, somatic recombination of T cell receptor gene segments, regionalization, reproductive developmental process, DNA metabolic process, DNA repair, double-strand break repair, double-strand break repair via

	nonhomologous end joining, DNA recombination, regulation of transcription, DNA-dependent, regulatio
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 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.,
matters needing attention	Avoid repeated freezing and thawing!
Usage suggestions	This product can be used in immunological reaction related experiments. For more information, please consult technical personnel.

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