PRKDC Antibody – Rabbit Polyclonal

PRODUCT OVERVIEW

Product Name	PRKDC, Polyclonal Antibody
Full Product Name	PRKDC, Phosphorylated (Thr2609) (DNA-dependent Protein Kinase Catalytic Subunit, DNA-PK Catalytic Subunit, DNA-PKcs, DNPK1, p460, HYRC, HYRC1) (MaxLight 650)
Product Gene Name	anti-PRKDC antibody
Clonality	Polyclonal
Isotype	IgG
Host	Rabbit
Species Reactivity	Human
Form/Format	Supplied as a liquid in PBS, pH 7.2. No preservative added. Labeled with MaxLight650.
Purity/Purification	Purified by Protein A Affinity Chromatography.
Specificity	Recognizes human DNA-PK when phosphorylated at Thr2609.
Preparation and Storage	Store product at 4 degree C in the dark. DO NOT FREEZE! Stable at 4 degree C for 12 months after receipt as an undiluted liquid. Dilute required amount only prior to immediate use. Further dilutions can be made in assay buffer. Caution: MaxLight650 conjugates are sensitive to light. For maximum recovery of product, centrifuge the original vial prior to removing the cap.
Molecular Weight	469,089 Da
Chromosome Location	Chromosome: 8; NC_000008.10 (48685669..48872743, complement). Location: 8q11
OMIM	600899
3D Structure	ModBase 3D Structure for P78527
Immunogen	Synthetic phosphopeptide corresponding to amino acid residues surrounding Thr2609 of human DNA-PK (KLH).
Conjugate	MaxLight650
Antigen Modification	Phosphorylated
Note	Preservative Free
Product Categories/Family for anti-PRKDC antibody	Antibodies; Transcription Factors
Applications Tested/Suitable for anti-PRKDC antibody	FLISA, Dot Blot (DB)
Application Notes for anti-PRKDC antibody	FLISA: 1:1,000 Dot Blot: 1:500 Applications are based on unconjugated antibody.
Related Product Information for anti-PRKDC antibody	MBS6494289 is an antibody targeting PRKDC. Also known as PRKDC, Phosphorylated (Thr2609) (DNA-dependent Protein Kinase Catalytic Subunit, DNA-PK Catalytic Subunit, DNA-PKcs, DNPK1, p460, HYRC, HYRC1) (MaxLight 650). Reactive in Human. Host: Rabbit.
Product References and Citations for anti-PRKDC antibody	1. Goudelock, D.M., et al., J. Biol. Chem. 278(32):29940-29947 (2003). 2. Ding, Q., et al., Mol. Cell. Biol. 23(16):5836-5848 (2003). 3. Lucero, H., et al., J. Biol. Chem. 278(24):22136-22143 (2003). 4. Calsou, P., et al., J. Mol. Biol. 326(1):93-103 (2003). 5. Karpova, A.Y., et al., Proc. Natl. Acad. Sci. USA 99(5):2818-2823 (2002).

Other Notes	Small volumes of anti-PRKDC antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for PRKDC. It may not necessarily be applicable to this product.

NCBI GI #	126032350
NCBI GeneID	5591
NCBI Accession #	NP_001075109.1
UniProt Primary Accession #	P78527
UniProt Secondary Accession #	P78528; Q13327; Q13337; Q14175; Q59H99; Q7Z611; Q96SE6; Q9UME3
UniProt Related Accession #	P78527
GenBank Nucleotide #	NM_001081640.1
NCBI Official Full Name	DNA-dependent protein kinase catalytic subunit isoform 2
NCBI Official Synonym Full Names	protein kinase, DNA-activated, catalytic polypeptide
NCBI Official Symbol	PRKDC
NCBI Official Synonym Symbols	HYRC; p350; DNAPK; DNPK1; HYRC1; XRCC7; DNA-PKcs
UniProt Protein Name	DNA-dependent protein kinase catalytic subunit
UniProt Synonym Protein Names	DNPK1; p460
UniProt Gene Name	PRKDC
UniProt Synonym Gene Names	HYRC; HYRC1; DNA-PK catalytic subunit; DNA-PKcs
UniProt Entry Name	PRKDC_HUMAN
NCBI Protein Information	DNA-dependent protein kinase catalytic subunit; p460; DNA-PK catalytic subunit; hyper-radiosensitivity of murine scid mutation, complementing 1
NCBI Summary for PRKDC	This gene encodes the catalytic subunit of the DNA-dependent protein kinase (DNA-PK). It functions with the Ku70/Ku80 heterodimer protein in DNA double strand break repair and recombination. The protein encoded is a member of the PI3/PI4-kinase family.[provided by RefSeq, Jul 2010]

UniProt Comments for PRKDC	DNAPK: an atypical protein kinase of the PIKK family. Involved in DNA nonhomologous end joining (NHEJ) required for double-strand break (DSB) repair and V(D)J recombination. and modulation of transcription. 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. Defects cause severe combined immune deficiency (SCID) which is characterized by a lack of mature functional lymphocytes and a high susceptibility to lethal opportunistic infections. Required for repair of radiation-induced dsDNA breaks. Loss of function in mice or horses leads to the SCID (severe combined immune deficiency) phenotype due to failure of immunoglobulin rearrangement. Target of mutation in mismatch repair-deficient colorectal cancer. Inhibitor: KU-7059. 2 isoforms of the human protein are produced by alternative splicing. Protein type: Kinase, protein; Nucleolus; Protein kinase, atypical; EC 2.7.11.1; DNA repair, damage; Protein kinase, Ser/Thr (non-receptor); ATYPICAL group; PIKK family; DNAPK subfamily Chromosomal Location of Human Ortholog: 8q11 Cellular Component: nucleoplasm; transcription factor complex; membrane; nucleolus; DNA-dependent protein kinase complex; cytosol Molecular Function: protein serine/threonine kinase activity; protein binding; enzyme binding; DNA binding; DNA-dependent protein kinase activity; transcription factor binding; ATP binding; protein kinase activity Biological Process: positive regulation of apoptosis; heart development; germ cell programmed cell death; T cell differentiation in the thymus; rhythmic process; double-strand break repair via nonhomologous end joining; negative regulation of protein amino acid phosphorylation; double-strand break repair; positive regulation of interferon type I production; response to gamma radiation; telomere maintenance; pro-B cell differentiation; somitogenesis; protein destabilization; immunoglobulin V(D)J recombination; B cell lineage commitment; protein modification process; regulation of circadian rhythm; DNA repair; double-strand break repair via homologous recombination; T cell lineage commitment; peptidyl-serine phosphorylation; DNA damage response, signal transduction resulting in induction of apoptosis; cellular response to insulin stimulus; innate immune response; T cell receptor V(D)J recombination; positive regulation of transcription from RNA polymerase II promoter; brain development Disease: Immunodeficiency 26 With Or Without Neurologic Abnormalities
Research Articles on PRKDC	**1.** XRCC7 rs7003908 polymorphism may contribute to cancer susceptibility for prostate cancer, which is recommended to be included in future large-sample studies and functional assays.
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