

DNA-dependent protein kinase catalytic subunit Recombinant Protein | PRKDC recombinant protein

Recombinant Mouse DNA-dependent protein kinase catalytic subunit

CATALOG # AAA113586	HOST E Coli or Yeast or Baculovirus or Mammalian Cell
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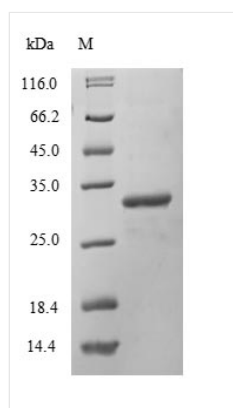
PRODUCT SYNONYMS

DNA-dependent protein kinase catalytic subunit; Recombinant Mouse DNA-dependent protein kinase catalytic subunit; p460; PRKDC recombinant protein

PRODUCT SPECIFICATIONS

Host	E Coli or Yeast or Baculovirus or Mammalian Cell
Purity/Purification	Greater or equal to 85% purity as determined by SDS-PAGE.
Form/Format	Lyophilized or liquid (Format to be determined during the manufacturing process)
Sequence Positions	3747-4015aa; Partial
Sequence	EYPFLVKGGE DLRQDQRIEQ IFEVMNAILS QDAACSQRNM QLRTYRVVPM TSRLGLIEWI ENTMTLKDLL LSNMSQEEKV ANNSDPKAPI RDYKDWLMKV SGKSDAGAYV LMYSRANRTE TVVAFRRRES QVPPDLLKRA FVKMSTSPEA FLALRSHFAS SHALLCISHW LLGIGDRHLN NFMVAMETGS VIGIDFGHAF GSATQFLPVP ELMPFRLTRQ FVSLMLPMKE TGLMCTVMVH ALRAFRSCAG LLTDTMEIFV KEPSFDWKS
Sequence Length	4128
Preparation and Storage	Store at -20 degree C, for extended storage, conserve at -20 degree C or -80 degree C.

IMAGES



SDS-PAGE

ADDITIONAL INFORMATION

Related Product Information for PRKDC recombinant protein	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 artis (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, C1D, c-Abl/ABL1, histone H1, HSPCA, c-jun/JUN, p53/TP53, PARP1, POU2F1, DHX9, SRF, 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.
References	Nonsense mutation at Tyr-4046 in the DNA-dependent protein kinase catalytic subunit of severe combined immune deficiency mice.Araki R., Fujimori A., Hamatani K., Mita K., Saito T., Mori M., Fukumura R., Morimyo M., Muto M., Itoh M., Tatsumi K., Abe M.Proc. Natl. Acad. Sci. U.S.A. 94:2438-2443(1997) Murine cell line SX9 bearing a mutation in the DNA-PKcs gene exhibits aberrant V(D) J recombination not only in the coding joint but also in the signal joint.Fukumura R., Araki R., Fujimori A., Mori M., Saito T., Watanabe F., Sarashi M., Itsukaichi H., Eguch-Kasai K., Sato K., Tatsumi K., Abe M.J. Biol. Chem. 273:13058-13064(1998) The murine DNA-PKcs gene consists of 86 exons dispersed in more than 250 kb.Fujimori A., Araki R., Fukumura R., Saito T., Mori M., Mita K., Tatsumi K., Abe M.Genomics 45:194-199(1997) Lineage-specific biology revealed by a finished genome assembly of the mouse.Church D.M., Goodstadt L., Hillier L.W., Zody M.C., Goldstein S., She X., Bult C.J., Agarwala R., Cherry J.L., DiCuccio M., Hlavina W., Kapustin Y., Meric P., Maglott D., Birtle Z., Marques A.C., Graves T., Zhou S., Teague B., Potamouis K., Churas C., Place M., Herschleb J., Runnheim R., Forrest D., Amos-Landgraf J., Schwartz D.C., Cheng Z., Lindblad-Toh K., Eichler E.E., Ponting C.P.PLoS Biol. 7:E1000112-E1000112(2009) Mouse Cdc21 only 0.5 kb upstream from DNA-PKcs in a head-to-head organization an implication of co-evolution of ATM family members and cell cycle regulating genes.Saito T., Matsuda Y., Ishii H., Watanabe F., Mori M., Hayashi A., Araki R., Fujimori A., Fukumura R., Morimyo M., Tatsumi K., Hori T., Abe M.Mamm. Genome 9:769-772(1998) Nonhomologous end-joining deficiency of L5178Y-S cells is not associated with mutation in the ABCDE autophosphorylation cluster.Brzoska K., Kruszewski M., Szumiel I.Acta Biochim. Pol. 53:233-236(2006) Cloning and chromosomal mapping of the mouse DNA-dependent protein kinase gene.Hamatani K., Matsuda Y., Araki R., Itoh M., Abe M.Immunogenetics 45:1-5(1996) Identification of a nonsense mutation in the carboxyl-terminal region of DNA-dependent protein kinase catalytic subunit in the scid mouse.Blunt T., Gell D., Fox M., Taccioli G.E., Lehmann A.R., Jackson S.P., Jeggo P.A.Proc. Natl. Acad. Sci. U.S.A. 93:10285-10290(1996) Biochemical and genetic defects in the DNA-dependent protein kinase in murine scid lymphocytes.Danska J.S., Holland D.P., Mariathasan S., Williams K.M., Guidos C.J.Mol. Cell. Biol. 16:5507-5517(1996) Functional interaction between DNA-PK and c-Abl in response to DNA damage.Kharbanda S., Pandey P., Jin S., Inoue S., Bharti A., Yuan Z.-M., Weichselbaum R., Weaver D., Kufe D.Nature 386:732-735(1997) Functional interaction between DNA-PKcs and telomerase in telomere length maintenance.Espejel S., Franco S., Sgura A., Gae D., Bailey S.M., Taccioli G.E., Blasco M.A.EMBO J. 21:6275-6287(2002) GAPDH mediates nitrosylation of nuclear proteins.Kornberg M.D., Sen N., Hara M.R., Juluri K.R., Nguyen J.V., Snowman A.M., Law L., Hester L.D., Snyder S.H.Nat. Cell Biol. 12:1094-1100(2010) Phosphorylation of the cryptochrome 1 C-terminal tail regulates circadian period length.Gao P., Yoo S.H., Lee K.J., Rosensweig C., Takahashi J.S., Chen B.P., Green C.B.J. Biol. Chem. 288:35277-35286(2013)

NCBI AND UNIPROT INFORMATION

NCBI GI #	124517706
NCBI GeneID	19090
NCBI Accession #	NP_035289.2
NCBI GenBank Nucleotide #	NM_011159.2
UniProt Accession #	P97313; O88187; P97928; Q307W9; Q3V2W8; Q8C2A7; Q9Z341; E9QN15
Molecular Weight	34.6 kDa
NCBI Official Full Name	DNA-dependent protein kinase catalytic subunit

NCBI Official Synonym Full Names	protein kinase, DNA activated, catalytic polypeptide
NCBI Official Symbol	Prkdc
NCBI Official Synonym Symbols	p460; scid; slip; DNAPK; DNPK1; HYRC1; XRCC7; dxnph; DOXNPH; DNAPDcs; AI326420; AU019811; DNA-PKcs
NCBI Protein Information	DNA-dependent protein kinase catalytic subunit
UniProt Protein Name	DNA-dependent protein kinase catalytic subunit
UniProt Gene Name	Prkdc
UniProt Synonym Gene Names	Xrcc7; DNA-PK catalytic subunit; DNA-PKcs
UniProt Entry Name	PRKDC_MOUSE

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://www.aaabiotech.com/prkdc-recombinant-protein-e-coli/113586>