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DNA-PKcs Antibody

Purified Mouse Monoclonal Antibody (Mab)
Catalog # AP52744-100

Specification

DNA-PKcs Antibody - Product Information

Application	WB, ICC, IP, IHC
Primary Accession	P78527
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Calculated MW	450 KDa

DNA-PKcs Antibody - Additional Information

Gene ID 5591

Other Names
DNA dependent protein kinase catalytic subuni;DNA PKcs;DNA-dependent protein kinase catalytic subunit;DNA-PK catalytic subunit;DNAPK;DNPK1;hyper radiosensitivity of murine scid mutation, complementing 1;HYRC;HYRC1;p350;p460;PRKDC;PRKDC_HUMAN;protein kinase, DNA activated, catalytic polypeptide;XRCC7.

Dilution
WB~~1:1000
ICC~~1:100
IP~~1:500
IHC~~1:100

Format
Purified mouse monoclonal antibody in PBS(pH 7.4)containing with 0.02% sodium azide,0.1%BSA & 50% glycerol.

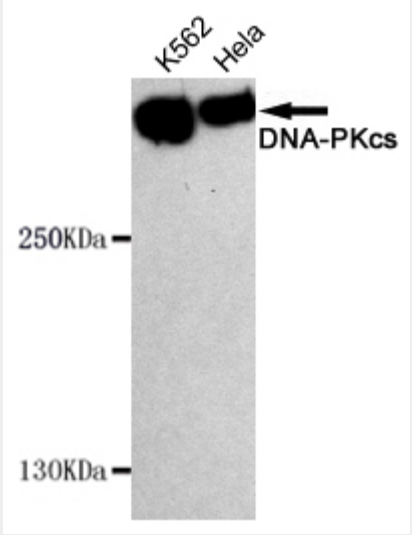
Storage
Store at -20 °C.Stable for 12 months from date of receipt

DNA-PKcs Antibody - Protein Information

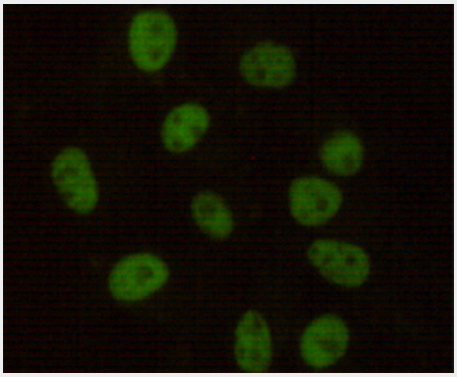
Name PRKDC

Synonyms HYRC, HYRC1

Function
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 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,



Western blot detection of DNA-PKcs in Hela and K562 cell lysates using DNA-PKcs mouse mAb (1:1000 diluted).Predicted band size:450KDa,Observed band size:450KDa.



Immunocytochemistry stain of Hela using DNA-PKcs mouse mAb (1:100).

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, 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 mechanism. Interacts with CRY1 and CRY2; negatively regulates CRY1 phosphorylation. Plays a role in the regulation of DNA virus-mediated innate immune response by assembling into the HDP-RNP complex, a complex that serves as a platform for IRF3 phosphorylation and subsequent innate immune response activation through the cGAS-STING pathway.

Cellular Location
Nucleus Nucleus, nucleolus

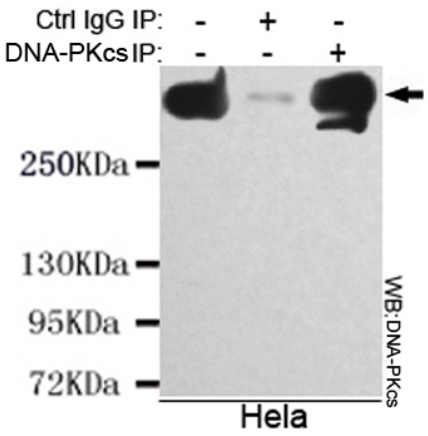
DNA-PKcs Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

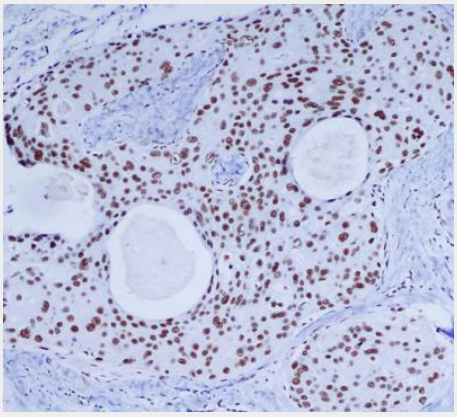
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

DNA-PKcs Antibody - Background

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 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, 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. Interacts with CRY1 and CRY2; negatively regulates CRY1 phosphorylation.



Immunoprecipitation analysis of Hela cell lysate using DNA-PKcs mouse mAb.



Immunohistochemical analysis of paraffin-embedded Breast cancer using DNA-PKcs mouse mAb (1/200 dilution).Antigen retrieval was performed by pressure cooking in citrate buffer (pH 6.0).

Hartley K.O.,et al.Cell 82:849-856(1995). Gell D.,et al.Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases. Anderson C.W.,et al.Radiat. Res. 156:2-9(2001). Ladenburger E.M.,et al.Cytogenet. Cell Genet. 77:268-270(1997). Sipley J.D.,et al.Proc. Natl. Acad. Sci. U.S.A. 92:7515-7519(1995).