

ARG54084 anti-DNA PKcs antibody

Package: 100 µl
Store at: -20°C

Summary

Product Description	Mouse Monoclonal antibody recognizes DNA PKcs
Tested Reactivity	Hu
Tested Application	ICC/IF, IHC-P, IP, WB
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Target Name	DNA PKcs
Species	Human
Immunogen	Purified recombinant human DNA-PKcs protein fragments expressed in E.coli
Conjugation	Un-conjugated
Alternate Names	p350; DNAPK; HYRC1; DNA-PKcs; DNA-dependent protein kinase catalytic subunit; DNPk1; IMD26; HYRC; EC 2.7.11.1; p460; DNA-PK catalytic subunit; XRCC7

Application Instructions

Application table	Application	Dilution
	ICC/IF	1:100
	IHC-P	1:200
	IP	Assay-dependent
	WB	1:1000

Application Note IHC-P: Antigen Retrieval: Boil tissue section in Citrate buffer (pH 6.0).
* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.

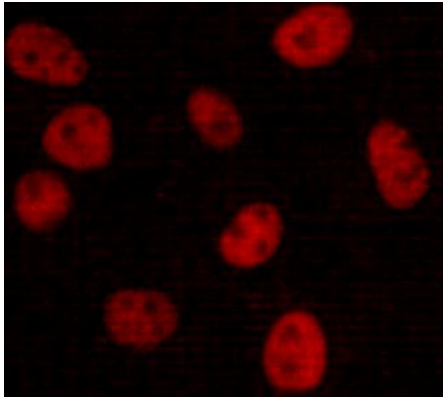
Properties

Form	Liquid
Purification	Affinity purified
Buffer	PBS (pH 7.4), 0.2% Sodium azide, 0.1% BSA and 50% Glycerol
Preservative	0.2% Sodium azide
Stabilizer	0.1% BSA and 50% Glycerol
Concentration	Lot dependent
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.

Note For laboratory research only, not for drug, diagnostic or other use.

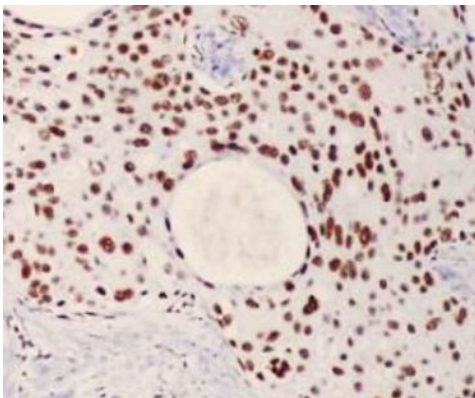
Bioinformation

Database links	GeneID: 5591 Human Swiss-port # P78527 Human
Gene Symbol	PRKDC
Gene Full Name	protein kinase, DNA-activated, catalytic polypeptide
Background	<p>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, 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.</p>
Function	<p>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 mechanism. Interacts with CRY1 and CRY2; negatively regulates CRY1 phosphorylation. [UniProt]</p>
Research Area	Gene Regulation antibody
Calculated Mw	469 kDa
PTM	<p>Autophosphorylated on Ser-2056, Thr-2609, Thr-2638 and Thr-2647. Ser-2056 and Thr-2609 are DNA damage-inducible phosphorylation sites (inducible with ionizing radiation, IR) dephosphorylated by PPP5C. Autophosphorylation induces a conformational change that leads to remodeling of the DNA-PK complex, requisite for efficient end processing and DNA repair.</p> <p>S-nitrosylated by GAPDH.</p> <p>Polyubiquitinated by RNF144A, leading to proteasomal degradation.</p>
Cellular Localization	Nucleus.



ARG54084 anti-DNA PKcs antibody ICC/IF image

Immunofluorescence: HeLa cells stained with ARG54084 anti-DNA PKcs antibody at 1:100 dilution.



ARG54084 anti-DNA PKcs antibody IHC-P image

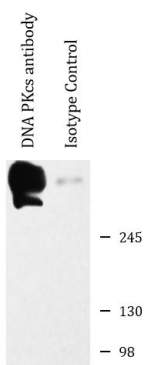
Immunohistochemistry: Paraffin-embedded breast cancer tissue stained with ARG54084 anti-DNA PKcs antibody at 1:200 dilution. Antigen Retrieval: Boil tissue section in Citrate buffer (pH 6.0).



A549

ARG54084 anti-DNA PKcs antibody WB image

Western blot: A549 cell lysate stained with ARG54084 anti-DNA PKcs antibody at 1:1000 dilution.



ARG54084 anti-DNA PKcs antibody IP image

Immunoprecipitation: HeLa cell lysates were immunoprecipitated and stained with ARG54084 anti-DNA PKcs antibody.