

KD-Validated Anti-DNA PKcs Rabbit Monoclonal Antibody
Rabbit monoclonal antibody
Catalog # AGI1041**Specification**

KD-Validated Anti-DNA PKcs Rabbit Monoclonal Antibody - Product Information

Application	WB, FC, ICC
Primary Accession	P78527
Reactivity	Human
Clonality	Monoclonal
Isotype	Rabbit IgG
Calculated MW	Predicted, 469 kDa , observed, 469 kDa
Gene Name	KDa
Aliases	PRKDC
	PRKDC; Protein Kinase, DNA-Activated, Catalytic Subunit; DNPK1; P460; DNA-Dependent Protein Kinase Catalytic Subunit; DNA-PKcs; DNA-PKC; DNAPK; XRCC7; HYRC1; P350; HYRC; Protein Kinase, DNA-Activated, Catalytic Polypeptide; DNA-PK Catalytic Subunit; EC 2.7.11.1; DNAPKc; Hyper-Radiosensitivity Of Murine Scid Mutation, Complementing 1; DNA-PKCS; DNAPKC; IMD26
Immunogen	A synthesized peptide derived from human DNA-PKcs

KD-Validated Anti-DNA PKcs Rabbit Monoclonal Antibody - Additional Information

Gene ID	5591
Other Names	
	DNA-dependent protein kinase catalytic subunit, DNA-PK catalytic subunit, DNA-PKcs, 2.7.11.1, DNPK1, Ser-473 kinase, S473K, p460, PRKDC, HYRC, HYRC1

KD-Validated Anti-DNA PKcs Rabbit Monoclonal Antibody - Protein Information**Name** PRKDC**Synonyms** HYRC, HYRC1**Function**

Serine/threonine-protein kinase that acts as a molecular sensor for DNA damage (PubMed: [11955432](http://www.uniprot.org/citations/11955432), PubMed: [12649176](http://www.uniprot.org/citations/12649176), PubMed: [14734805](http://www.uniprot.org/citations/14734805), PubMed: [33854234](http://www.uniprot.org/citations/33854234)). Involved in DNA non-homologous end joining (NHEJ) required for double-strand break (DSB) repair and V(D)J recombination (PubMed: [11955432](http://www.uniprot.org/citations/11955432))

[target="_blank">11955432](#), PubMed: [, PubMed: \[, PubMed: \\[, PubMed: \\\[\\\\). Must be bound to DNA to express its catalytic properties \\\\(PubMed: \\\\[, PubMed: \\\\\[, PubMed: \\\\\\[, PubMed: \\\\\\\[, PubMed: \\\\\\\\[, PubMed: \\\\\\\\\[, PubMed: \\\\\\\\\\[, PubMed: \\\\\\\\\\\[, PubMed: \\\\\\\\\\\\[, PubMed: \\\\\\\\\\\\\[, PubMed: \\\\\\\\\\\\\\[, PubMed: \\\\\\\\\\\\\\\[, PubMed: \\\\\\\\\\\\\\\\[, PubMed: \\\\\\\\\\\\\\\\\[, PubMed: \\\\\\\\\\\\\\\\\\[, PubMed: \\\\\\\\\\\\\\\\\\\[, PubMed: \\\\\\\\\\\\\\\\\\\\[, PubMed: \\\\\\\\\\\\\\\\\\\\\[, PubMed: \\\\\\\\\\\\\\\\\\\\\\[, PubMed: \\\\\\\\\\\\\\\\\\\\\\\[, PubMed: \\\\\\\\\\\\\\\\\\\\\\\\[, PubMed: \\\\\\\\\\\\\\\\\\\\\\\\\[, PubMed: \\\\\\\\\\\\\\\\\\\\\\\\\\[, PubMed: \\\\\\\\\\\\\\\\\\\\\\\\\\\[, PubMed: \\\\\\\\\\\\\\\\\\\\\\\\\\\\[, PubMed: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\[, PubMed:\\\\\\\\\\\\\\\\\\\\\\\\\\\\\]\\\\\\\\\\\\\\\\\\\\\\\\\\\\\(http://www.uniprot.org/citations/1597196\\\\\\\\\\\\\\\\\\\\\\\\\\\\\)\\\\\\\\\\\\\\\\\\\\\\\\\\\\]\\\\\\\\\\\\\\\\\\\\\\\\\\\\(http://www.uniprot.org/citations/15177042\\\\\\\\\\\\\\\\\\\\\\\\\\\\)\\\\\\\\\\\\\\\\\\\\\\\\\\\]\\\\\\\\\\\\\\\\\\\\\\\\\\\(http://www.uniprot.org/citations/14704337\\\\\\\\\\\\\\\\\\\\\\\\\\\)\\\\\\\\\\\\\\\\\\\\\\\\\\]\\\\\\\\\\\\\\\\\\\\\\\\\\(http://www.uniprot.org/citations/14612514\\\\\\\\\\\\\\\\\\\\\\\\\\)\\\\\\\\\\\\\\\\\\\\\\\\\]\\\\\\\\\\\\\\\\\\\\\\\\\(http://www.uniprot.org/citations/14599745\\\\\\\\\\\\\\\\\\\\\\\\\)\\\\\\\\\\\\\\\\\\\\\\\\]\\\\\\\\\\\\\\\\\\\\\\\\(http://www.uniprot.org/citations/12509254\\\\\\\\\\\\\\\\\\\\\\\\)\\\\\\\\\\\\\\\\\\\\\\\]\\\\\\\\\\\\\\\\\\\\\\\(http://www.uniprot.org/citations/11889123\\\\\\\\\\\\\\\\\\\\\\\)\\\\\\\\\\\\\\\\\\\\\\]\\\\\\\\\\\\\\\\\\\\\\(http://www.uniprot.org/citations/10467406\\\\\\\\\\\\\\\\\\\\\\)\\\\\\\\\\\\\\\\\\\\\]\\\\\\\\\\\\\\\\\\\\\(http://www.uniprot.org/citations/10026262\\\\\\\\\\\\\\\\\\\\\)\\\\\\\\\\\\\\\\\\\\]\\\\\\\\\\\\\\\\\\\\(http://www.uniprot.org/citations/14627815\\\\\\\\\\\\\\\\\\\\)\\\\\\\\\\\\\\\\\\\]\\\\\\\\\\\\\\\\\\\(http://www.uniprot.org/citations/14734805\\\\\\\\\\\\\\\\\\\)\\\\\\\\\\\\\\\\\\]\\\\\\\\\\\\\\\\\\(http://www.uniprot.org/citations/12649176\\\\\\\\\\\\\\\\\\)\\\\\\\\\\\\\\\\\]\\\\\\\\\\\\\\\\\(http://www.uniprot.org/citations/11955432\\\\\\\\\\\\\\\\\)\\\\\\\\\\\\\\\\]\\\\\\\\\\\\\\\\(http://www.uniprot.org/citations/14734805\\\\\\\\\\\\\\\\)\\\\\\\\\\\\\\\]\\\\\\\\\\\\\\\(http://www.uniprot.org/citations/12649176\\\\\\\\\\\\\\\)\\\\\\\\\\\\\\]\\\\\\\\\\\\\\(http://www.uniprot.org/citations/11955432\\\\\\\\\\\\\\)\\\\\\\\\\\\\]\\\\\\\\\\\\\(http://www.uniprot.org/citations/14734805\\\\\\\\\\\\\)\\\\\\\\\\\\]\\\\\\\\\\\\(http://www.uniprot.org/citations/12649176\\\\\\\\\\\\)\\\\\\\\\\\]\\\\\\\\\\\(http://www.uniprot.org/citations/11955432\\\\\\\\\\\)\\\\\\\\\\]\\\\\\\\\\(http://www.uniprot.org/citations/14734805\\\\\\\\\\)\\\\\\\\\]\\\\\\\\\(http://www.uniprot.org/citations/12649176\\\\\\\\\)\\\\\\\\]\\\\\\\\(http://www.uniprot.org/citations/11955432\\\\\\\\)\\\\\\\]\\\\\\\(http://www.uniprot.org/citations/15574326\\\\\\\)\\\\\\]\\\\\\(http://www.uniprot.org/citations/14734805\\\\\\)\\\\\]\\\\\(http://www.uniprot.org/citations/12649176\\\\\)\\\\]\\\\(http://www.uniprot.org/citations/11955432\\\\)\\\]\\\(http://www.uniprot.org/citations/34352203\\\)\\]\\(http://www.uniprot.org/citations/33854234\\)\]\(http://www.uniprot.org/citations/14734805\)](http://www.uniprot.org/citations/12649176)

target="_blank">16397295, PubMed:18644470, PubMed:2247066, PubMed:2507541, PubMed:26237645, PubMed:26666690, PubMed:28712728, PubMed:29478807, PubMed:30247612, PubMed:8407951, PubMed:8464713, PubMed:9139719, PubMed:9362500). Can phosphorylate C1D not only in the presence of linear DNA but also in the presence of supercoiled DNA (PubMed:9679063). Ability to phosphorylate p53/TP53 in the presence of supercoiled DNA is dependent on C1D (PubMed:9363941). Acts as a regulator of the phosphatidylinositol 3-kinase/protein kinase B signal transduction by mediating phosphorylation of 'Ser-473' of protein kinase B (PKB/AKT1, PKB/AKT2, PKB/AKT3), promoting their activation (PubMed:15262962). 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 (By similarity). 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 (PubMed:28712728). Also regulates the cGAS-STING pathway by catalyzing phosphorylation of CGAS, thereby impairing CGAS oligomerization and activation (PubMed:33273464). Also regulates the cGAS-STING pathway by mediating phosphorylation of PARP1 (PubMed:35460603).

Cellular Location

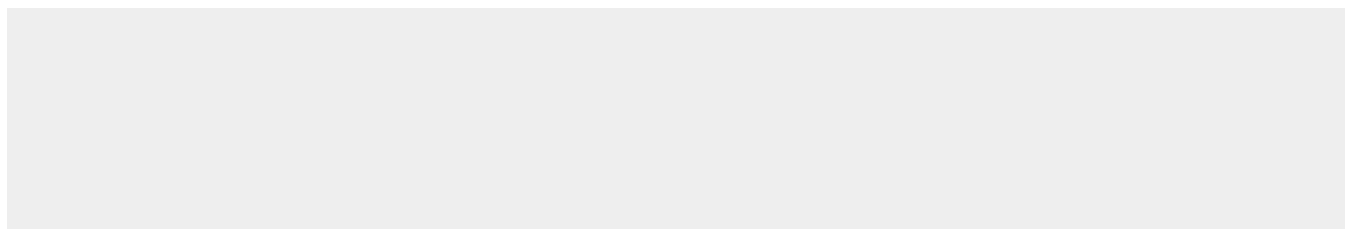
Nucleus. Nucleus, nucleolus. Cytoplasm, cytosol

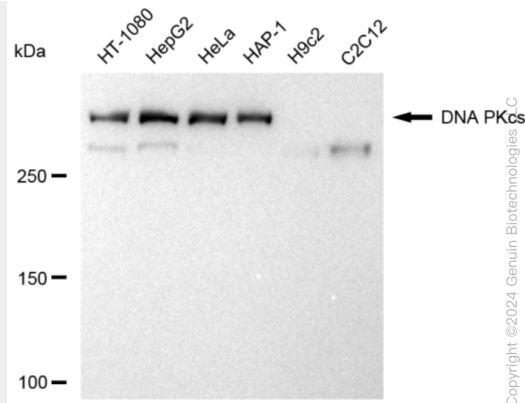
KD-Validated Anti-DNA PKcs Rabbit Monoclonal Antibody - Protocols

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

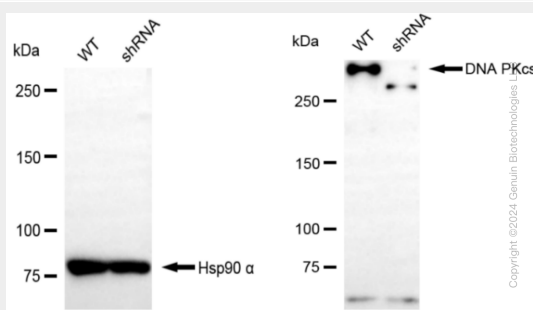
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

KD-Validated Anti-DNA PKcs Rabbit Monoclonal Antibody - Images

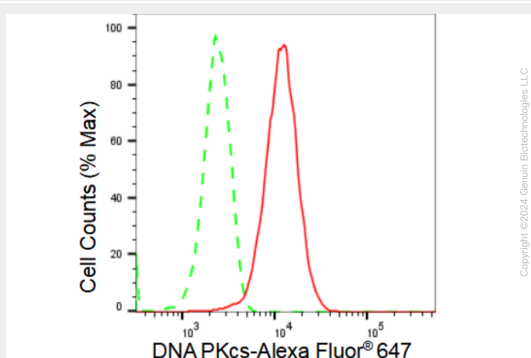




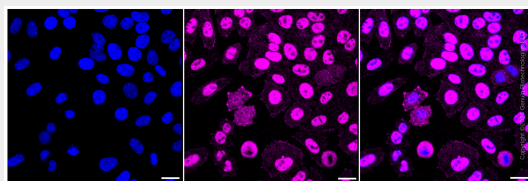
Western blotting analysis using anti-DNA PKcs antibody (Cat#AGI1041). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-DNA PKcs antibody (Cat#AGI1041, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Western blotting analysis using anti-DNA PKcs antibody (Cat#AGI1041). DNA PKcs expression in wild type (WT) and DNA PKcs shRNA knockdown (KD) HeLa cells with 30 µg of total cell lysates. Hsp90 α serves as a loading control. The blot was incubated with anti-DNA PKcs antibody (Cat#AGI1041, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Flow cytometric analysis of DNA PKcs expression in HepG2 cells using DNA PKcs antibody (Cat#AGI1041, 1:2,000). Green, isotype control; red, DNA PKcs.



Immunocytochemical staining of HepG2 cells with DNA PKcs antibody (Cat#AGI1041, 1:1,000). Nuclei were stained blue with DAPI; DNA PKcs was stained magenta with Alexa Fluor® 647.

Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Medium. Scale bar: 20 μ m.