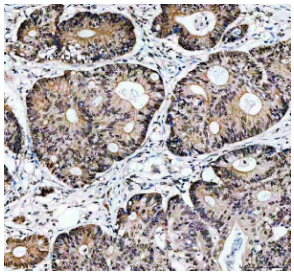
DNA-PKcs Antibody / PRKDC Antibody (R31076)

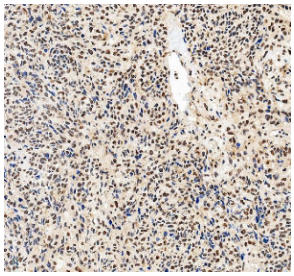
Catalog No.	Formulation	Size
R31076	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

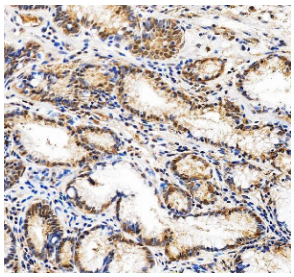
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P78527
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml
Limitations	This DNA-PKcs Antibody / PRKDC Antibody is available for research use only.



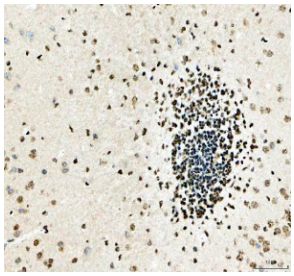
DNA-PKcs Antibody Human Colon Cancer IHC. Immunohistochemical staining of FFPE human colon cancer tissue using DNA-PKcs antibody. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer before incubation with DNA-PKcs antibody at 2 ug/ml. An HRP-conjugated secondary antibody with DAB chromogen was used for visualization. Tumor cells demonstrate prominent nuclear staining, consistent with the nuclear localization and DNA repair function of DNA-PKcs. This DNA-PKcs Antibody, also called PRKDC Antibody, is suitable for studies of DNA damage repair, non-homologous end joining, genome stability, and DNA repair signaling.



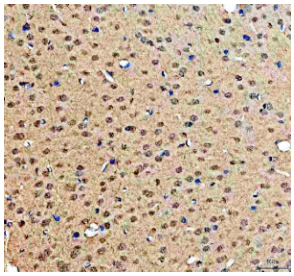
DNA-PKcs Antibody Human Ovarian Cancer IHC. Immunohistochemical staining of FFPE human ovarian cancer tissue using DNA-PKcs antibody. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer before incubation with DNA-PKcs antibody at 2 ug/ml. An HRP-conjugated secondary antibody with DAB chromogen was used for visualization. Tumor cells display strong nuclear staining with weaker cytoplasmic staining, consistent with the established role of DNA-PKcs in nuclear DNA damage repair and genome maintenance. This DNA-PKcs Antibody, also called PRKDC Antibody, is suitable for studies of DNA damage repair, non-homologous end joining, genome stability, and DNA repair signaling.



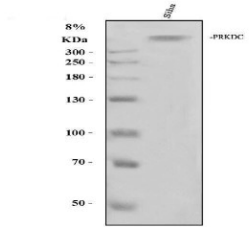
DNA-PKcs Antibody Human Gastric Carcinoma IHC. Immunohistochemical staining of FFPE human gastric carcinoma tissue using DNA-PKcs antibody. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer before incubation with DNA-PKcs antibody at 2 ug/ml. An HRP-conjugated secondary antibody with DAB chromogen was used for visualization. Tumor cells show predominantly nuclear staining with weaker cytoplasmic staining, consistent with the known localization and function of DNA-PKcs in DNA damage repair. This DNA-PKcs Antibody, also called PRKDC Antibody, is suitable for studies of DNA damage repair, non-homologous end joining, genome stability, and DNA repair signaling.



DNA-PKcs Antibody Mouse Brain IHC. Immunohistochemical staining of FFPE mouse brain tissue using DNA-PKcs antibody. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer before incubation with DNA-PKcs antibody at 2 ug/ml. An HRP-conjugated secondary antibody with DAB chromogen was used for visualization. Widespread nuclear staining is observed throughout the brain, with particularly strong immunoreactivity in densely populated neuronal cell layers, consistent with the nuclear localization of DNA-PKcs. This DNA-PKcs Antibody, also called PRKDC Antibody, is suitable for studies of DNA damage repair, non-homologous end joining, genome stability, and DNA repair signaling.



DNA-PKcs Antibody Rat Brain IHC. Immunohistochemical staining of FFPE rat brain tissue using DNA-PKcs antibody. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer before incubation with DNA-PKcs antibody at 2 ug/ml. An HRP-conjugated secondary antibody with DAB chromogen was used for visualization. Diffuse nuclear staining is observed throughout the brain parenchyma, consistent with the widespread expression and nuclear localization of DNA-PKcs in neural tissue. This DNA-PKcs Antibody, also called PRKDC Antibody, is suitable for studies of DNA damage repair, non-homologous end joining, genome stability, and DNA repair signaling.



DNA-PKcs Antibody Human SiHa Cell WB. Western blot analysis of human SiHa whole cell lysate using DNA-PKcs antibody. Lane 1: SiHa whole cell lysate. Proteins were resolved on an 8% SDS-PAGE gel, transferred to nitrocellulose, and the membrane was incubated with DNA-PKcs antibody at 0.5 ug/ml followed by an HRP-conjugated secondary antibody. A high molecular weight band consistent with the expected size of DNA-PKcs was detected. This DNA-PKcs Antibody, also called PRKDC Antibody, is suitable for studies of DNA double-strand break repair, non-homologous end joining, genome stability, and DNA damage response.

Description

DNA-PKcs Antibody / PRKDC Antibody recognizes DNA-dependent protein kinase catalytic subunit, the large serine/threonine protein kinase encoded by the PRKDC gene. DNA-PKcs is a central component of the DNA-dependent protein kinase complex, where it functions together with the Ku70/Ku80 heterodimer to detect and repair DNA double-strand breaks through the non-homologous end joining pathway. By coordinating DNA end recognition, processing, and ligation, DNA-PKcs plays a critical role in preserving genome stability and protecting cells from genotoxic stress. Because DNA double-strand break repair is essential for normal cell survival, DNA-PKcs Antibody is widely used in studies of DNA repair mechanisms and genome maintenance.

Activation of DNA-PKcs occurs rapidly following DNA damage, where binding of the Ku complex to broken DNA ends recruits and activates the catalytic subunit through extensive autophosphorylation and substrate phosphorylation. DNA-PKcs regulates numerous downstream proteins involved in DNA repair, chromatin remodeling, cell cycle checkpoint control, and transcriptional responses to DNA damage. In addition to its role in non-homologous end joining, DNA-PKcs contributes to V(D)J recombination during lymphocyte development, making it indispensable for adaptive immune system

maturation. Consequently, PRKDC has become an important target for investigations into genome integrity, immune development, and cellular responses to ionizing radiation.

Altered DNA-PKcs expression or activity has been associated with cancer progression, radiation resistance, chemotherapy resistance, immunodeficiency syndromes, and age-related genomic instability. Because many tumors rely on efficient DNA repair pathways for survival after DNA-damaging therapies, DNA-PKcs has emerged as a major therapeutic target in oncology. Selective DNA-PK inhibitors are being actively investigated to enhance the effectiveness of radiation therapy, platinum-based chemotherapy, and other DNA-damaging treatments. DNA-PKcs Antibody supports studies examining DNA repair signaling, therapeutic resistance, synthetic lethality, and the molecular mechanisms that maintain chromosome stability.

DNA-PKcs is commonly analyzed by Western blotting, immunohistochemistry, immunofluorescence, immunoprecipitation, flow cytometry, and related protein detection methods to evaluate DNA repair activity, cellular responses to DNA damage, and protein localization. A DNA-PKcs Antibody is a valuable research tool for detecting endogenous PRKDC expression and investigating DNA damage repair, non-homologous end joining, genome stability, DNA repair signaling, and cellular responses to genotoxic stress.

Explore our Cancer Marker Antibodies page to discover additional antibodies for investigating DNA damage responses, genome stability, therapeutic resistance, cell cycle regulation, and cancer-associated signaling pathways.

Application Notes

The stated application concentrations are suggested starting amounts. Titration of the DNA-PKcs Antibody / PRKDC Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

An amino acid sequence from the N-terminus of human PRKDC (AKNAEMHKNKLQYFMEQFY) was used as the immunogen for this DNA-PKcs antibody.

Storage

After reconstitution, the DNA-PKcs antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

DNA-PKcs antibody, PRKDC antibody, DNA-Dependent Protein Kinase Catalytic Subunit antibody, Protein Kinase DNA-Activated Catalytic Subunit antibody

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