

Product datasheet

Anti-DNA PKcs (phospho S2056) antibody [EPR5670] ab124918

Recombinant RabMAb

★★★★★ 1 Abreviews 7 References 7 Images

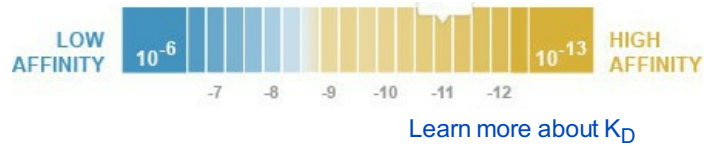
Overview

Product name	Anti-DNA PKcs (phospho S2056) antibody [EPR5670]
Description	Rabbit monoclonal [EPR5670] to DNA PKcs (phospho S2056)
Host species	Rabbit
Specificity	ab124918 only detects DNA PKcs phosphorylated at Serine 2056.
Tested applications	Suitable for: ICC/IF, WB, IHC-P, ELISA
Species reactivity	Reacts with: Human Does not react with: Mouse, Rat
Immunogen	Synthetic peptide within Human DNA PKcs aa 2000-2100 (phospho S2056). The exact sequence is proprietary. Database link: P78527 (Peptide available as ab181446)
Positive control	WB: Jurkat cell lysate. IHC-P: Human lung carcinoma and brain tissues. ICC/IF: Jurkat cells.
General notes	Our RabMAb [®] technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb[®] patents We are constantly working hard to ensure we provide our customers with best in class antibodies. As a result of this work we are pleased to now offer this antibody in purified format. We are in the process of updating our datasheets. The purified format is designated 'PUR' on our product labels. If you have any questions regarding this update, please contact our Scientific Support team. This product is a recombinant rabbit monoclonal antibody.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C. Stable for 12 months at -20°C.
Dissociation constant (K_D)	K _D = 2.60 x 10 ⁻¹¹ M





Storage buffer	pH: 7.40 Preservative: 0.01% Sodium azide Constituents: 40% Glycerol, 0.05% BSA, 59% PBS
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR5670
Isotype	IgG

Applications

Our [Abpromise guarantee](#) covers the use of **ab124918** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
ICC/IF		1/100 - 1/500.
WB	★★★★★	1/5000 - 1/10000. Predicted molecular weight: 469 kDa.
IHC-P		1/100. Perform heat mediated antigen retrieval before commencing with IHC staining protocol. See IHC antigen retrieval protocols .
ELISA		Use a concentration of 0.001 - 1 µg/ml.

Target

Function

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.

Sequence similarities

Belongs to the PI3/PI4-kinase family.

Contains 1 FAT domain.
Contains 1 FATC domain.
Contains 2 HEAT repeats.
Contains 1 PI3K/PI4K domain.
Contains 3 TPR repeats.

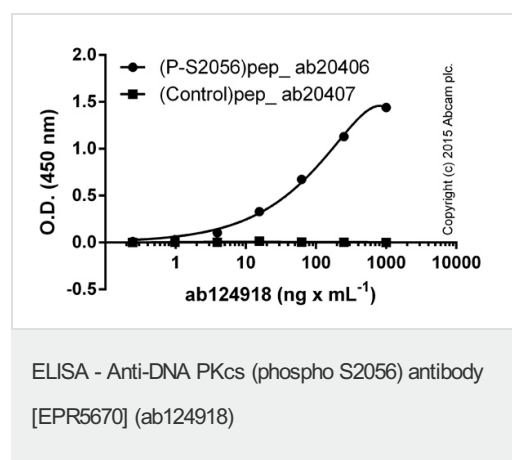
Post-translational modifications

Phosphorylated upon DNA damage, probably by ATM or ATR. Autophosphorylated on Thr-2609, Thr-2638 and Thr-2647. Thr-2609 is a DNA damage-inducible phosphorylation site (inducible with ionizing radiation, IR). Autophosphorylation induces a conformational change that leads to remodeling of the DNA-PK complex, requisite for efficient end processing and DNA repair.
S-nitrosylated by GAPDH.

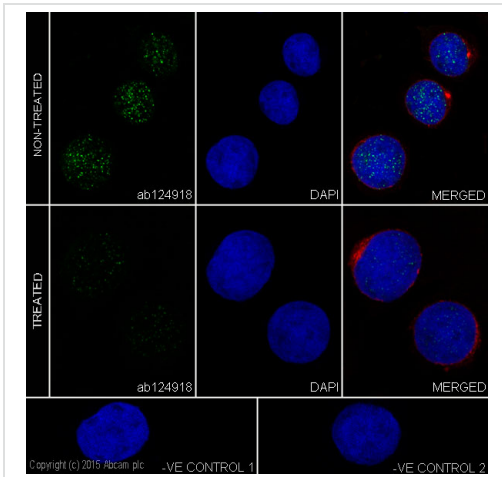
Cellular localization

Nucleus.

Images



Serially diluted ab124918 was bound to immobilised phospho- or control peptides (1 microgram per mL). The antibody was detected by HRP-labelled goat anti-rabbit IgG ([ab97080](#); diluted 50000 times) and signal was developed with TMB substrate.

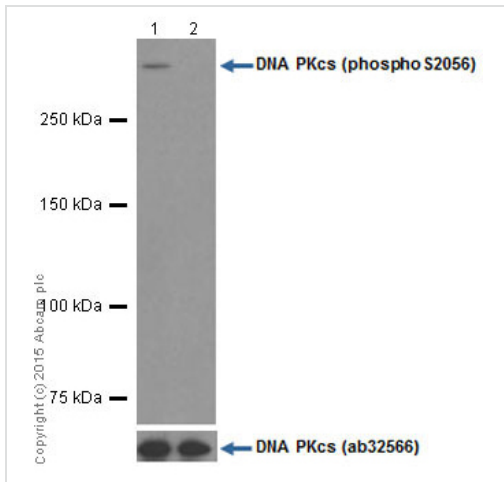


Immunocytochemistry/ Immunofluorescence - Anti-DNA PKcs (phospho S2056) antibody [EPR5670] (ab124918)

Immunocytochemistry/Immunofluorescence analysis of Jurkat cells (untreated and treated with Alkaline Phosphatase) labelling DNA PKcs (phospho S2056) with purified ab124918 at 1/500. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. ab150077, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody. DAPI (blue) was used as the nuclear counterstain. ab7291, a mouse anti-tubulin (1/1000) and ab150120, an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/1000) were also used.

Control 1: primary antibody (1/500) and secondary antibody, ab150120, an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/1000).

Control 2: ab7291 (1/1000) and secondary antibody, ab150077, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000).



Western blot - Anti-DNA PKcs (phospho S2056) antibody [EPR5670] (ab124918)

All lanes : Anti-DNA PKcs (phospho S2056) antibody [EPR5670] (ab124918) at 1/10000 dilution (purified)

Lane 1 : Jurkat whole cell lysate - untreated

Lane 2 : Jurkat whole cell lysate - treated with alkaline phosphatase

Lysates/proteins at 10 µg per lane.

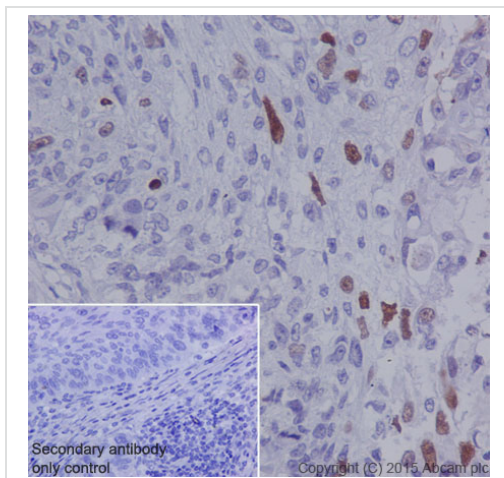
Secondary

All lanes : Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/10000 dilution

Predicted band size: 469 kDa

Observed band size: 469 kDa

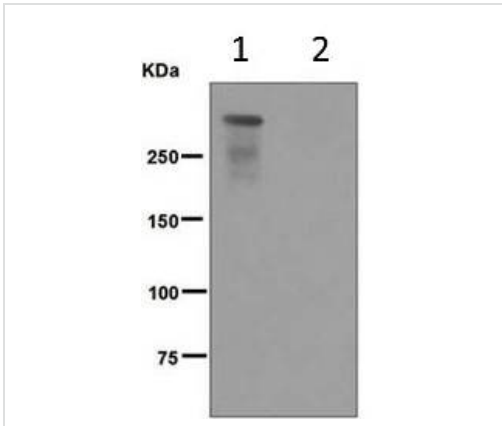
Blocking and dilution buffer: 5% NFDM/TBST.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-DNA PKcs (phospho S2056) antibody [EPR5670] (ab124918)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human lung carcinoma tissue labelling DNA PKcs (phospho S2056) with purified ab124918 at 1/100. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. ab97051, a HRP-conjugated goat anti-rabbit IgG (H+L) was used as the secondary antibody (1/500). Negative control using PBS instead of primary antibody.

Counterstained with hematoxylin.



Western blot - Anti-DNA PKcs (phospho S2056) antibody [EPR5670] (ab124918)

All lanes : Anti-DNA PKcs (phospho S2056) antibody [EPR5670] (ab124918) at 1/1000 dilution (unpurified)

Lane 1 : Jurkat cell lysate, untreated

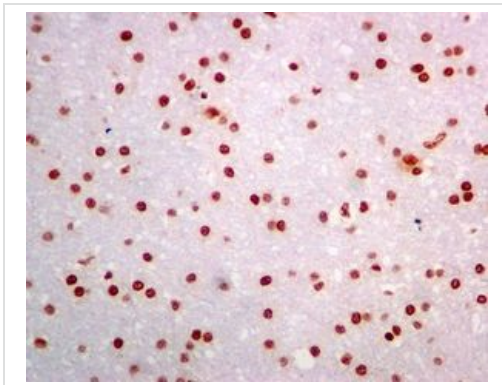
Lane 2 : Jurkat cell lysate, treated with alkaline phosphatase

Lysates/proteins at 10 µg per lane.

Secondary

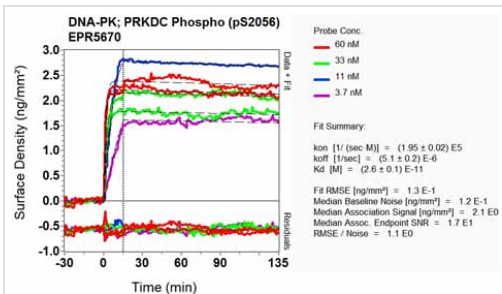
All lanes : HRP-conjugated goat anti-rabbit IgG at 1/2000 dilution

Predicted band size: 469 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-DNA PKcs (phospho S2056) antibody [EPR5670] (ab124918)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human brain tissue labelling DNA PKcs (phospho S2056) with unpurified ab124918 at a dilution of 1/100.



Other - Anti-DNA PKcs (phospho S2056) antibody [EPR5670] (ab124918)

Equilibrium dissociation constant (K_D)

Learn more about K_D

[Click here to learn more about \$K_D\$](#)

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