


Anti-DNA PKcs antibody ab168854

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Overview

Product name	Anti-DNA PKcs antibody
Description	Goat polyclonal to DNA PKcs
Host species	Goat
Tested applications	Suitable for: WB, IP, IHC-P
Species reactivity	Reacts with: Human Predicted to work with: Mouse, Rat, Guinea pig, Cow, Pig, Chimpanzee, Rhesus monkey, Gorilla, Chinese hamster, Orangutan, Bat 
Immunogen	Synthetic peptide corresponding to Human DNA PKcs aa 4078-4128. Database link: P78527
Positive control	293T, HeLa and Jurkat whole cell lysate (ab7899).
General notes	<p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.</p> <p>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As</p>

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 long term.
Storage buffer	pH: 7 Preservative: 0.09% Sodium azide Constituent: 99% Tris citrate/phosphate pH 7 to 8
Purity	Immunogen affinity purified
Purification notes	ab168854 was affinity purified using an epitope specific to DNA PKcs immobilized on solid support.

Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab168854 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
WB		1/2000 - 1/10000. Predicted molecular weight: 469 kDa.
IP		Use at 2-10 µg/mg of lysate.
IHC-P		1/1000 - 1/5000. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

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.

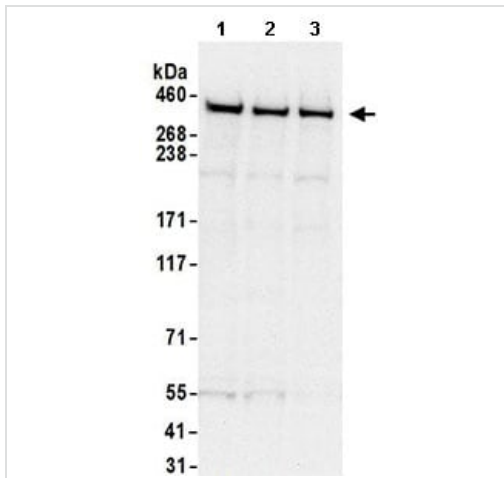
Post-translational modifications

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



Western blot - Anti-DNA PKcs antibody (ab168854)

All lanes : Anti-DNA PKcs antibody (ab168854) at 0.1 µg/ml

Lane 1 : 293T whole cell lysate

Lane 2 : HeLa whole cell lysate

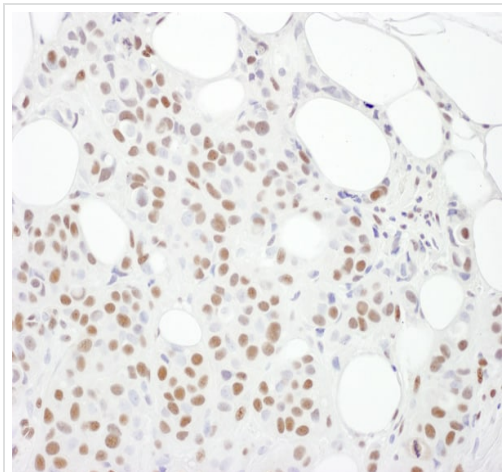
Lane 3 : Jurkat whole cell lysate

Lysates/proteins at 50 µg per lane.

Developed using the ECL technique.

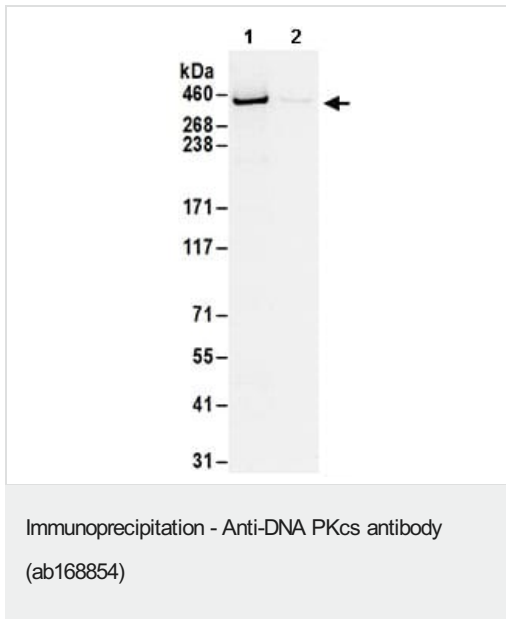
Predicted band size: 469 kDa

Exposure time: 10 seconds



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-DNA PKcs antibody (ab168854)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human breast carcinoma tissue labelling DNA PKcs with ab168854 at 1/5000 (0.2µg/ml). Detection: DAB.



Detection of DNA PKcs in Immunoprecipitates of 293T whole cell lysate (1 mg for IP, 20% of IP loaded) using ab168854 at 6 µg/mg lysate for IP (Lane 1) and at 1 µg/ml for subsequent Western blot detection. Lane 2 represents control IgG IP.

Detection: Chemiluminescence with an exposure time of 10 seconds.

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