abcam

Product datasheet

Anti-DNA PKcs antibody ab70250

2 Abreviews 23 References 2 Images

Overview

Product name	Anti-DNA PKcs antibody
Description	Rabbit polyclonal to DNA PKcs
Host species	Rabbit
Specificity	Ku-80 co-immunoprecipitates using this antibody.
Tested applications	**Suitable for:** WB, IP
Species reactivity	**Reacts with:** Human **Predicted to work with:** Mouse, Rat, Chicken, Guinea pig, Cow, Pig, Chimpanzee, Rhesus monkey, Gorilla, Chinese hamster, Orangutan
Immunogen	Synthetic peptide corresponding to Human DNA PKcs (C terminal). Immunogen is in the region of aa 4075 and the c terminus. Database link: **P78527**
Positive control	Whole cell lysate from Hela cells.
General notes	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. 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

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.
Storage buffer	pH: 6.8 Preservative: 0.09% Sodium azide Constituents: 0.1% BSA, Tris buffered saline
Purity	Immunogen affinity purified
Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab70250 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)**	1/1000 - 1/10000. Detects a band of approximately 469 kDa (predicted molecular weight: 469 kDa).
IP		Use at an assay dependent concentration. **Use at 2 to 5 µg/mg lysate.**

Target

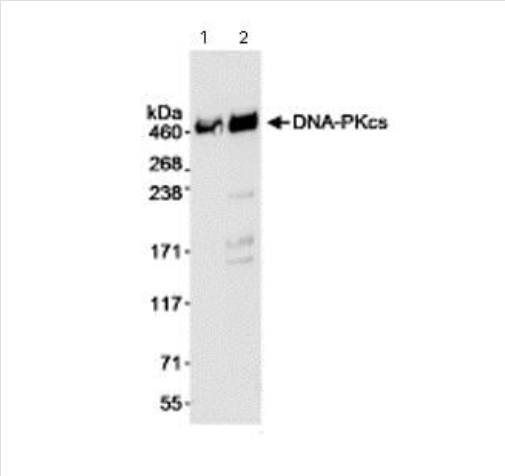
Function Serine/threonine-protein kinase that acts as a molecular sensor for DNA damage. Involved in DNA nonhomologous end joining (NHEJ) required for double-strand break (DSB) repair and V(D)J recombination. Must be bound to DNA to express its catalytic properties. Promotes processing of hairpin DNA 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

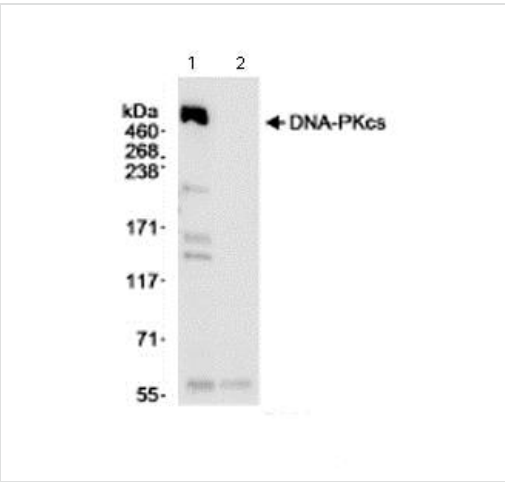


Western blot - Anti-DNA PKcs antibody (ab70250)

All lanes : Anti-DNA PKcs antibody (ab70250) at 0.1 µg/ml

Lane 1 : Whole cell lysate from Hela cells at 15 µg
Lane 2 : Whole cell lysate from Hela cells at 50 µg

Predicted band size: 469 kDa
Observed band size: 469 kDa
Additional bands at: 170 kDa, 180 kDa, 230 kDa. We are unsure as to the identity of these extra bands.



Immunoprecipitation - Anti-DNA PKcs antibody (ab70250)

Immunoprecipitation/ Western Blot of DNA PKcs
Lane 1: ab70250 at 3µg/100µg for IP of HeLa whole cell lysate (1mg) followed by ab70250 at 0.1µg/ml for WB.
Lane 2: Control IgG.

Chemiluminescence with an exposure time of 30 seconds.

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