abcam

ab124821

Anti-Cdk6 antibody [EPR4515]

Anti-Cdk6 antibody [EPR4515] (ab124821) is a rabbit monoclonal antibody detecting Cdk6 in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **Human**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency
- Over 100 publications

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR4515
Purification technique	Affinity purification Protein A
Specificity	Based on the immunogen sequence, we do not expect the antibody to cross-react with other CDK family members. No cross-reactivity testing has been performed.
Concentration	0.624 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

IP

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/50000 - 1/200000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/500
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100 - 1/1000

Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Target data

See full target information CDK6

Function	Serine/threonine-protein kinase involved in the control of the cell cycle and differentiation; promotes G1/S transition. Phosphorylates pRB/RB1 and NPM1. Interacts with D-type G1 cyclins during interphase at G1 to form a pRB/RB1 kinase and controls the entrance into the cell cycle. Involved in initiation and maintenance of cell cycle exit during cell differentiation; prevents cell proliferation and negatively regulates cell differentiation, but is required for the proliferation of specific cell types (e.g. erythroid and hematopoietic cells). Essential for cell proliferation within the dentate gyrus of the hippocampus and the subventricular zone of the lateral ventricles. Required during thymocyte development. Promotes the production of newborn neurons, probably by modulating G1 length. Promotes, at least in astrocytes, changes in patterns of gene expression, changes in the actin cytoskeleton including loss of stress fibers, and enhanced motility during cell differentiation. Prevents myeloid differentiation by interfering with RUNX1 and reducing its transcription transactivation activity, but promotes proliferation of normal myeloid progenitors. Delays senescence. Promotes the proliferation of beta-cells in pancreatic islets of Langerhans. May play a role in the centrosome organization during the cell cycle phases (PubMed:23918663).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Stable for 12 months at -20°C

Notes

What is this antibody validated in?
Anti-Cdk6 antibody [EPR4515] (ab124821) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunohistochemistry (IHC-P),

Immunocytochemistry/immunofluorescence (ICC/IF) in Human samples.

What is the molecular weight of Cdk6?
Anti-Cdk6 [EPR4515] (ab124821) specifically detects a band for Cdk6 (UniProt: Q00534) at a molecular weight of 37kDa.

Trusted by the scientific community
Anti-Cdk6 [EPR4515] (ab124821) was first used in a scientific publication in 2012 and has been cited over 100 times in peer-reviewed journals.

Specificity confirmed
The specificity of Anti-Cdk6 antibody [EPR4515] (ab124821) has been confirmed by Western blot testing in CDK6 Knockout HAP1 cells.

Other related products
We have a range of other formats of antibody clone [EPR4515] also available for your convenience: ab124821, Alexa Fluor® 488 - ab198944, Alexa Fluor® 647 - ab198946, Carrier free - ab222395, PE - ab305713, APC - ab305714, HRP - ab305715, Alkaline Phosphatase - ab308887, Alexa Fluor® 594 - ab310613, Alexa Fluor® 555 - ab312141, Alexa Fluor® 568 - ab312627, Alexa Fluor® 750 - ab320982

Species reactivity
Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Cdk6 also known as Cyclin-dependent kinase 6 is a protein kinase involved in the regulation of the cell cycle. It has a molecular weight of approximately 40 kDa. Cdk6 is expressed in various tissues including lymphoid tissues and the brain. It plays a mechanical role by phosphorylating target proteins which impacts cell cycle progression particularly during the transition from G1 phase to S phase.

	Cdk6 can work in conjunction with D-type cyclins to form a complex that is critical for its activity.
Biological function summary	Cdk6 functions as a regulator of the cell cycle. It participates in a complex with cyclin D to control the G1 phase progression. This activity is essential for the regulation of cell division and proliferation. The association with cyclin D allows Cdk6 to phosphorylate the retinoblastoma protein (Rb) leading to the release of E2F transcription factors that promote the expression of genes necessary for DNA synthesis.
Pathways	Cdk6 is an important component of the cell cycle control pathway. It interacts primarily with the retinoblastoma protein and Cyclin D1 in this context. The cell cycle pathway is critical for controlled cell proliferation and its dysregulation can lead to diseases like cancer. Another involved pathway is the PI3K/AKT pathway which can activate Cdk6 activity through upstream signaling events implicating Cdk6 in cellular responses to growth signals.
Associated diseases and disorders	Cdk6 has a significant role in cancer development due to its involvement in uncontrolled cell proliferation. Its overexpression or dysregulation is often linked to cancers such as leukemia and glioblastoma. In cancer the interaction with proteins like cyclin D1 can lead to unchecked progression through the cell cycle contributing to oncogenesis. Additionally Cdk6 inhibitors are being explored as therapeutic agents in cancer treatment due to their potential to restore control over cell cycle progression.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

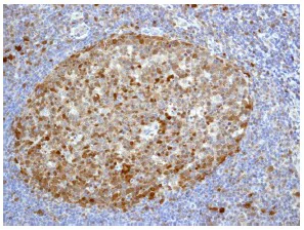
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:

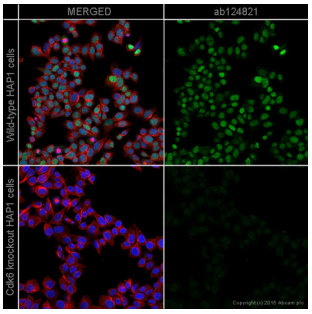
8 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cdk6 antibody [EPR4515] (ab124821)

Cdk6 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cdk6 antibody

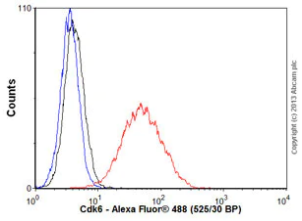
ab124821 at 1/100 dilution, staining Cdk6 in Formalin fixed Paraffin-embedded Human tonsil tissue by Immunohistochemistry.
Heat mediated antigen retrieval was performed with 0.01M citrate buffer, pH 6.0.



Immunocytochemistry/ Immunofluorescence - Anti-Cdk6 antibody [EPR4515] (ab124821)

Cdk6 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Cdk6 antibody

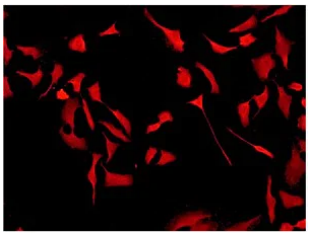
ab124821 staining Cdk6 in wild-type HAP1 cells (top panel) and Cdk6 knockout HAP1 cells (bottom panel). The cells were fixed with 4% formaldehyde (10min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab124821 at 1/500 dilution and ab195889 at 1/250 dilution (shown in pseudo colour red) overnight at +4°C, followed by a further incubation at room temperature for 1h with a goat secondary antibody to Rabbit IgG (Alexa Fluor® 488) (ab150081) at 2 µg/ml (shown in green). Nuclear DNA was labelled in blue with DAPI.



Flow Cytometry (Intracellular) - Anti-Cdk6 antibody [EPR4515] (ab124821)

Cdk6 Flow Cytometry (Intracellular) staining using rabbit Anti-Cdk6 antibody

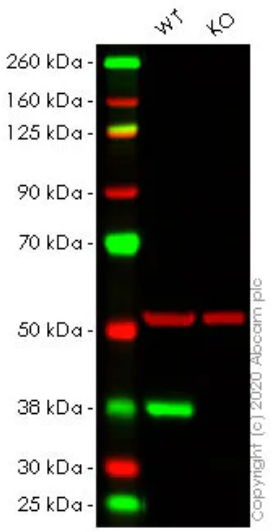
Overlay histogram showing HeLa cells stained with ab124821 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab124821, 1/1000 dilution) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-rabbit IgG (H&L) (ab150077) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (0.1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter.



Immunocytochemistry/ Immunofluorescence - Anti-Cdk6 antibody [EPR4515] (ab124821)

Cdk6 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Cdk6 antibody

ICC/IF image of ab124821 at 1/100 dilution, staining Cdk6 in HeLa cells.



Western blot - Anti-Cdk6 antibody [EPR4515] (ab124821)

Lanes 1- 2: Merged signal (red and green). Green - ab124821 observed at 37 kDa. Red - Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) observed at 50 kDa.
ab124821 was shown to react with Cdk6 in wild-type HeLa cells in western blot. Loss of signal was observed when knockout cell line ab266059 (knockout cell lysate ab257088) was used. Wild-type HeLa and Cdk6 knockout HeLa cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab124821 and Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-Cdk6 antibody [EPR4515] (ab124821) at 1/1000 dilution

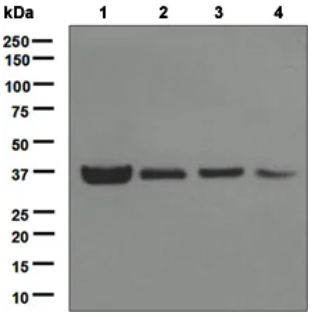
Lane 1:
Wild-type HeLa cell lysate at 20 µg

Lane 2:
CDK6 knockout HeLa cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 37 kDa

Observed band size: 37 kDa



Western blot - Anti-Cdk6 antibody [EPR4515] (ab124821)

All lanes:
Western blot - Anti-Cdk6 antibody [EPR4515] (ab124821) at 1/1000 dilution

Lane 1:
Jurkat cell lysate at 10 µg

Lane 2:
K562 cell lysate at 10 µg

Lane 3:
HeLa cell lysate at 10 µg

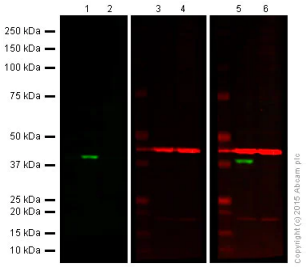
Lane 4:
293T cell lysate at 10 µg

Secondary

All lanes:
Goat-anti-rabbit HRP at 1/2000 dilution

Predicted band size: 37 kDa

Observed band size: 37 kDa



Western blot - Anti-Cdk6 antibody [EPR4515] (ab124821)

Lanes 1 and 2: Green signal from target - ab124821 observed at 37 kDa
Lanes 3 and 4: Red signal from loading control - ab8226 observed at 42 kDa
Lanes 5 and 6: Merged (red and green) signal
ab124821 was shown to specifically react with CDK6 when CDK6 knockout samples were used. Wild-type and CDK6 knockout samples were subjected to SDS-PAGE. ab124821 and ab8226 (loading control to beta actin) were diluted at 1/10 000 and 1/1000 respectively and incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1/10,000 dilution for 1 h at room temperature before imaging.
Lanes 1 - 2:
Western blot - Anti-Cdk6 antibody [EPR4515] (ab124821) at 1/10000 dilution

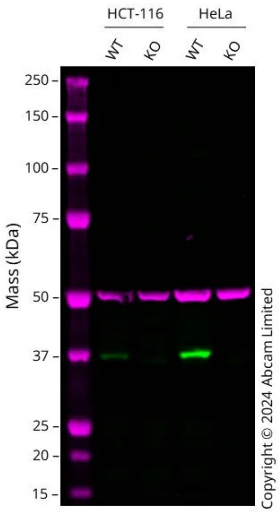
Lanes 3 - 4:
Western blot - Anti-Cdk6 antibody [EPR4515] (ab124821) at 1/1000 dilution

Lanes 5 - 6:
Western blot - Anti-Cdk6 antibody [EPR4515] (ab124821)

Lanes 1, 3 and 5:
Wild-type HAP1 cell lysate at 20 µg

Lanes 2, 4 and 6:
CDK6 knockout HAP1 cell lysate at 20 µg

Predicted band size: 37 kDa



Western blot - Anti-Cdk6 antibody [EPR4515] (ab124821)

Cdk6 Western blot staining using rabbit Anti-Cdk6 antibody

Western blot: Anti-CDK6 antibody [EPR4515] (ab124821) staining at 1/1000 dilution, shown in green; Mouse anti-Alpha Tubulin [DM1A] (ab7291) loading control staining at 1/20000 dilution, shown in magenta. In Western blot, ab124821 was shown to bind specifically to CDK6. A band was observed at 37 kDa in wild-type HCT 116 cell lysates with no signal observed at this size in CDK6 knockout cell line. To generate this image, wild-type and CDK6 knockout HCT 116 cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution.
All lanes:
Western blot - Anti-Cdk6 antibody [EPR4515] (ab124821) at 1/1000 dilution

Lane 1:
Wild-type HCT 116 cell lysate at 20 µg

Lane 2:
CDK6 knockout HCT 116 cell lysate at 20 µg

Lane 3:
Wild-type HeLa ab255929 cell lysate at 20 µg

Lane 4:
CDK6 knockout HeLa ab260923 cell lysate at 20 µg

Secondary

All lanes:
Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 37 kDa

Observed band size: 37 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.