abcam

ab215318

Alexa Fluor® 555 Anti-Cdk4 antibody [EPR4513-32-7]

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 555
Excitation/Emission	Ex: 555nm, Em: 565nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR4513-32-7
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50
Notes	-

ICC/IF

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information CDK4

Function Ser/Thr-kinase component of cyclin D-CDK4 (DC) complexes that phosphorylate and inhibit members of the retinoblastoma (RB) protein family including RB1 and regulate the cell-cycle during G(1)/S transition. Phosphorylation of RB1 allows dissociation of the transcription factor E2F from the RB/E2F complexes and the subsequent transcription of E2F target genes which are responsible for the progression through the G(1) phase. Hypophosphorylates RB1 in early G(1) phase. Cyclin D-CDK4 complexes are major integrators of various mitogenenic and antimitogenic signals. Also phosphorylates SMAD3 in a cell-cycle-dependent manner and represses its transcriptional activity. Component of the ternary complex, cyclin D/CDK4/CDKN1B, required for nuclear translocation and activity of the cyclin D-CDK4 complex.

Storage

Shipped at conditions Blue Ice

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	Avoid freeze / thaw cycle, Store in the dark

Notes

This conjugated antibody has been KO validated based on the results obtained with the unconjugated clone: Anti-Cdk4 antibody [EPR4513-32-7] (ab108357).

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.

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Supplementary info

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

Activity summary	Cdk4 also known as Cyclin-dependent kinase 4 is a serine/threonine kinase involved in cell cycle regulation. Cdk4 has a molecular weight of approximately 34 kDa. This protein mainly locates in the nucleus of the cell and its expression occurs in diverse tissues. Cdk4 partners with D-type cyclins to exert its function which is essential for the transition from the G1 phase to the S phase of the cell cycle. Researchers often study Cdk4 using techniques like immunohistochemistry (IHC) to determine its expression and localization in different tissues.
Biological function summary	Cdk4 plays a fundamental role in cell cycle regulation by forming a complex with D-type cyclins. Together they phosphorylate the retinoblastoma protein (Rb) resulting in the release of E2F transcription factors which promote the expression of genes necessary for DNA replication. The Cdk4/cyclin D complex regulates the cell's commitment to enter S phase and continue cell division. This regulation is key for normal cell proliferation and tissue homeostasis. Cdk4 activity is strictly controlled by INK4 family members acting as inhibitors and adding an extra regulation layer.
Pathways	Cdk4 is an integral part of important signaling pathways like the cell cycle and PI3K/AKT pathways. In the cell cycle pathway Cdk4 relays signals downstream that drive the transition from the G1 to S phase through its interaction with cyclin D and Rb. In the PI3K/AKT pathway signaling can influence cyclin D expression indirectly affecting Cdk4 activity. Proteins such as Cdk6 closely relate to Cdk4 and often compensate or partner with Cdk4 in these pathways to maintain proper cell cycle progression.
Associated diseases and disorders	Abnormalities in Cdk4 function or regulation relate to cancer and certain metabolic syndromes. Hyperactivity of Cdk4 due to overexpression or mutation frequently occurs in several cancers including melanoma and breast cancer. In these malignancies Cdk4 aberrantly drives excessive cell proliferation. Mutations or alterations in proteins such as p16 an inhibitor of Cdk4 are often found in these cancers highlighting the critical role of Cdk4 in disease progression. Understanding the role of Cdk4 allows researchers to develop targeted therapies such as Cdk4/6 inhibitors offering new treatment options.

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

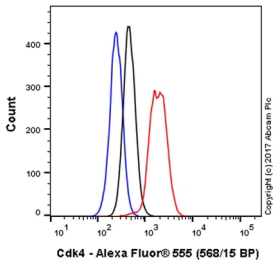
We do not recommend this combination. It is not covered by our product promise.

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.

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1 product image



Flow Cytometry (Intracellular) - Alexa Fluor® 555 Anti-Cdk4 antibody [EPR4513-32-7] (ab215318)

Cdk4 Flow Cytometry (Intracellular) staining using rabbit Anti-Cdk4 antibody

Overlay histogram showing T47D cells stained with ab215318 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS / 10% normal goat serum to block non-specific protein-protein interactions followed by the antibody (ab215318, 1/50 dilution) for 30 min at 22°C.
Isotype control antibody (black line) was Rabbit IgG (monoclonal) Alexa Fluor® 555 (ab208569) used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5,000 events were collected using a 50 mW Yellow/Green laser (561nm) and 586/15 bandpass filter.

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