abcam

ab278732

APC Anti-Rb (phospho S807 + S811) antibody [RbS807S811-D9]

Recombinant

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	APC
Excitation/Emission	Ex: 650nm, Em: 660nm
Storage buffer	Preservative: 0.09% Sodium azide Constituents: PBS, 0.2% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human RB1 pS807 + S811. The exact immunogen used to generate this antibody is proprietary information. Database link P06400
Clone number	RbS807S811-D9
Purification technique	Affinity purification Protein A/G
Light chain type	kappa

Reactivity data

Flow Cyt

Tested

Species	Human

Dilution info	5 µL for 10^6 Cells
Notes	-

Target data

See full target information RB1 pS807 + S811

Function	Tumor suppressor that is a key regulator of the G1/S transition of the cell cycle (PubMed:10499802). The hypophosphorylated form binds transcription regulators of the E2F family, preventing transcription of E2F-responsive genes (PubMed:10499802). Both physically blocks E2Fs transactivating domain and recruits chromatin-modifying enzymes that actively repress transcription (PubMed:10499802). Cyclin and CDK-dependent phosphorylation of RB1 induces its dissociation from E2Fs, thereby activating transcription of E2F responsive genes and triggering entry into S phase (PubMed:10499802). RB1 also promotes the G0-G1 transition upon phosphorylation and activation by CDK3/cyclin-C (PubMed:15084261). Directly involved in heterochromatin formation by maintaining overall chromatin structure and, in particular, that of constitutive heterochromatin by stabilizing histone methylation. Recruits and targets histone methyltransferases SUV39H1, KMT5B and KMT5C, leading to epigenetic transcriptional repression. Controls histone H4 'Lys-20' trimethylation. Inhibits the intrinsic kinase activity of TAF1. Mediates transcriptional repression by SMARCA4/BRG1 by recruiting a histone deacetylase (HDAC) complex to the c-FOS promoter. In resting neurons, transcription of the c-FOS promoter is inhibited by BRG1-dependent recruitment of a phospho-RB1-HDAC1 repressor complex. Upon calcium influx, RB1 is dephosphorylated by calcineurin, which leads to release of the repressor complex (By similarity). (Microbial infection) In case of viral infections, interactions with SV40 large T antigen, HPV E7 protein or adenovirus E1A protein induce the disassembly of RB1-E2F1 complex thereby disrupting RB1's activity.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Store in the dark

Notes

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.

Supplementary info

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

Activity summary	Retinoblastoma protein (Rb) also known as pRb is an important regulatory protein with a molecular weight of approximately 110 kDa. It is mainly expressed in the nucleus of cells. Rb functions as a tumor suppressor by controlling the cell cycle progression from G1 to S phase. Rb becomes active when it is dephosphorylated allowing it to bind and inhibit E2F transcription factors consequently preventing the transcription of genes essential for S phase entry.
Biological function summary	Retinoblastoma protein influences cellular proliferation differentiation and apoptosis. It acts within a larger protein complex modulating various cellular responses. When functional Rb halts uncontrolled cell division important for maintaining normal tissue homeostasis. In its phosphorylated state known as phospho-Rb or phospho-Rb E182 it loses its regulatory capabilities which can lead to unrestrained cell cycle progression.
Pathways	Several involve the retinoblastoma protein. One key pathway is the p53 pathway which Rb interacts with to influence cellular outcomes like cell-cycle arrest and apoptosis. Rb cooperates with proteins like p21 to implement these processes. Additionally it is involved in the cyclin D-dependent kinase 4 (CDK4) pathway which modulates its phosphorylation state influencing binding interactions and cell cycle control.
Associated diseases and disorders	Dysregulation of retinoblastoma protein is commonly associated with cancer particularly retinoblastoma and breast cancer. In retinoblastoma mutations in the Rb gene directly lead to uncontrolled cell proliferation due to the absence of functional Rb protein. Additionally Rb's connection to the E2F family of transcription factors can become disrupted contributing to oncogenesis in other cancers.

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.

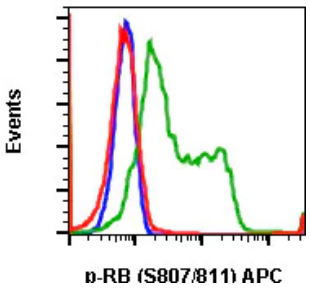
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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 - APC Anti-Rb (phospho S807 + S811) antibody [RbS807S811-D9] (ab278732)

Rb (phospho S807 + S811) Flow Cytometry staining using rabbit Anti-Rb (phospho S807 + S811) antibody

Flow cytometric analysis of U937 cells untreated and unstained as negative control (blue) or untreated and stained (green) or treated with lambda phosphatase and stained (red) using ab278732.

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