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RB1 Antibody (Center S249)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP16868c

Product Information

Application	WB, E
Primary Accession	P06400
Other Accession	NP_000312.2
Reactivity	Human, Rat, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB36870
Calculated MW	106159
Antigen Region	227-256

Additional Information

Gene ID	5925
Other Names	Retinoblastoma-associated protein, p105-Rb, pRb, Rb, pp110, RB1
Target/Specificity	This RB1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 227-256 amino acids from the Central region of human RB1.
Dilution	WB~~1:2000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	RB1 Antibody (Center S249) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	RB1
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).

Cellular Location

Nucleus. Cytoplasm {ECO:0000250|UniProtKB:P13405}. Note=During keratinocyte differentiation, acetylation by KAT2B/PCAF is required for nuclear localization (PubMed:20940255). Localizes to the cytoplasm when hyperphosphorylated (By similarity). {ECO:0000250|UniProtKB:P13405, ECO:0000269|PubMed:20940255}

Tissue Location

Expressed in the retina. Expressed in foreskin keratinocytes (at protein level) (PubMed:20940255)

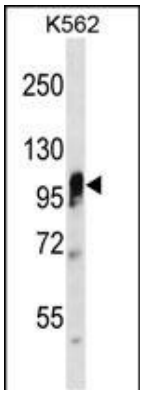
Background

The protein encoded by this gene is a negative regulator of the cell cycle and was the first tumor suppressor gene found. The encoded protein also stabilizes constitutive heterochromatin to maintain the overall chromatin structure. The active, hypophosphorylated form of the protein binds transcription factor E2F1. Defects in this gene are a cause of childhood cancer retinoblastoma (RB), bladder cancer, and osteogenic sarcoma.

References

Liao, C.C., et al. J. Biol. Chem. 285(43):33134-33143(2010)
Kim, T.R., et al. Biochem. Biophys. Res. Commun. 400(1):100-105(2010)
Hirschi, A., et al. Nat. Struct. Mol. Biol. 17(9):1051-1057(2010)
Tooley, C.E., et al. Nature 466(7310):1125-1128(2010)
Dimaras, H., et al. Transl Res 156(2):91-97(2010)

Images



RB1 Antibody (Center S249) (Cat. #AP16868c) western blot analysis in K562 cell line lysates (35ug/lane).This demonstrates the RB1 antibody detected the RB1 protein (arrow).

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