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[Primary Antibody]

Rabbit Anti-Rb antibody

Catalog Number: SL22267R

FOR RESEARCH USE ONLY

[DATASHEET]

Host:	Rabbit
Isotype:	IgG
Clonality:	Polyclonal
Target:	Rb
Immunogen:	KLH conjugated synthetic peptide derived from human Rb : 821-920/928
Purification:	affinity purified by Protein A
Concentration:	1mg/ml
Storage:	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol. Shipped at 4℃. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.
Applications:	IHC-P=1:100-500 IHC-F=1:100-500 IF=1:100-500 （Paraffin sections need antigen repair） not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Reactivity:	Human(predicted:Mouse,Rat,Dog,Pig,Cow,Horse,Rabbit,Sheep)
Predicted MW.:	102kDa
Subcellular Location:	The nucleus
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. [provided by RefSeq, Jul 2008] **Function:** Key regulator of entry into cell division that acts as a tumor suppressor. Promotes G0-G1 transition when phosphorylated by CDK3/cyclin-C. Acts as a transcription repressor of E2F1 target genes. The underphosphorylated, active form of RB1 interacts with E2F1 and represses its transcription activity, leading to cell cycle arrest. Directly involved in heterochromatin formation by maintaining overall chromatin structure and, in particular, that of constitutive heterochromatin by stabilizing

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	histone methylation. Recruits and targets histone methyltransferases SUV39H1, SUV420H1 and SUV420H2, 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). 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. **Subunit:** nteracts with ATAD5. Interacts with PRMT2, CDK1 and CDK2. The hypophosphorylated form interacts with and sequesters the E2F1 transcription factor. Interacts with heterodimeric E2F/DP transcription factor complexes containing TFDP1 and either E2F1, E2F3, E2F4 or E2F5, or TFDP2 and E2F4. The unphosphorylated form interacts with EID1, ARID3B, KDM5A, SUV39H1, MJD2A/JHDM3A and THOC1. Interacts with the N-terminal domain of TAF1. Interacts with AATF, DNMT1, LIN9, LMNA, SUV420H1, SUV420H2, PELP1 and TMPO-alpha. May interact with NDC80. Interacts with GRIP1 and UBR4. Interacts with ARID4A and KDM5B. Interacts with E4F1 and LIMD1. Interacts with SMARCA4/BRG1 AND HDAC1. Interacts with adenovirus E1A protein, HPV E7 protein and SV40 large T antigen. Interacts with PSMA3 and USP4. Interacts (when methylated at Lys-860) with L3MBTL1. **Subcellular Location:** Nucleus. **Tissue Specificity:** Expressed in the retina. **Post-translational modifications:** Phosphorylated by CDK6 and CDK4, and subsequently by CDK2 at Ser-567 in G1, thereby releasing E2F1 which is then able to activate cell growth. Dephosphorylated at the late M phase. SV40 large T antigen, HPV E7 and adenovirus E1A bind to the underphosphorylated, active form of pRb. Phosphorylation at Thr-821 and Thr-826 promotes interaction between the C-terminal domain C and the Pocket domain, and thereby inhibits interactions with heterodimeric E2F/DP transcription factor complexes. Dephosphorylated at Ser-795 by calcineruin upon calcium stimulation. CDK3/cyclin-C-mediated phosphorylation at Ser-807 and Ser-811 is required for G0-G1 transition. Phosphorylated by CDK1 and CDK2 upon TGFB1-mediated apoptosis. N-terminus is methylated by METTL11A/NTM1. Monomethylated at Lys-860

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	by SMYD2, promoting interaction with L3MBTL1. DISEASE: Defects in RB1 are the cause of childhood cancer retinoblastoma (RB) [MIM:180200]. RB is a congenital malignant tumor that arises from the nuclear layers of the retina. It occurs in about 1:20'000 live births and represents about 2% of childhood malignancies. It is bilateral in about 30% of cases. Although most RB appear sporadically, about 20% are transmitted as an autosomal dominant trait with incomplete penetrance. The diagnosis is usually made before the age of 2 years when strabismus or a gray to yellow reflex from pupil ('cat eye') is investigated. Defects in RB1 are a cause of susceptibility to bladder cancer (BLC) [MIM:109800]. A malignancy originating in tissues of the urinary bladder. It often presents with multiple tumors appearing at different times and at different sites in the bladder. Most bladder cancers are transitional cell carcinomas. They begin in cells that normally make up the inner lining of the bladder. Other types of bladder cancer include squamous cell carcinoma (cancer that begins in thin, flat cells) and adenocarcinoma (cancer that begins in cells that make and release mucus and other fluids). Bladder cancer is a complex disorder with both genetic and environmental influences. Defects in RB1 are a cause of osteogenic sarcoma (OSRC) [MIM:259500]. **Similarity:** Belongs to the retinoblastoma protein (RB) family. **Database links:** **Entrez Gene:** 5925 Human **Entrez Gene:** 19645 Mouse **Entrez Gene:** 24708 Rat Omim: 614041 Human **SwissProt:** P06400 Human **SwissProt:** P13405 Mouse **SwissProt:** P33568 Rat **Unigene:** 408528 Human

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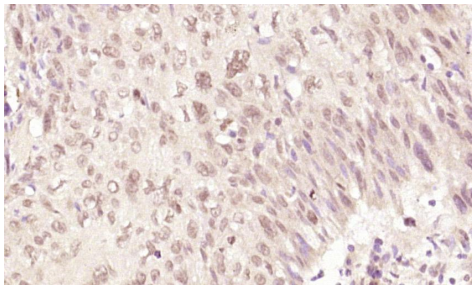
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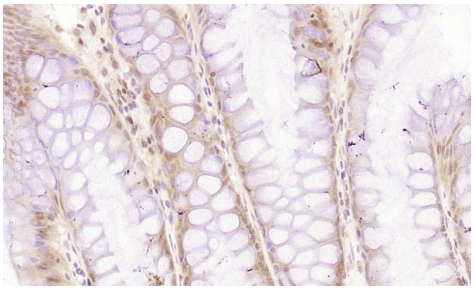
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[VALIDATION IMAGES]



Paraformaldehyde-fixed, paraffin embedded (human laryngeal carcinoma); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (Rb) Polyclonal Antibody, Unconjugated (SL22267R) at 1:400 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining.



Paraformaldehyde-fixed, paraffin embedded (human colon carcinoma); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (Rb) Polyclonal Antibody, Unconjugated (SL22267R) at 1:400 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining.

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