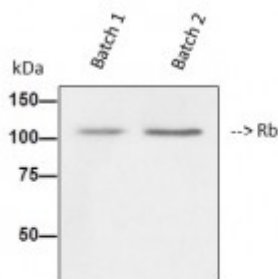


Anti-Rb antibody



Western Blot (WB) analysis of HepG2 cell lysate using Rb Antibody (STJ95388) from 2 batches.



Description

Rb is a protein encoded by the RB1 gene which is approximately 106,1 kDa. Rb is localised to the nucleus and is involved in CDK-mediated phosphorylation and removal of Cdc6 and mitotic cell cycle. It stabilizes constitutive heterochromatin to maintain the overall chromatin structure and is a key regulator of entry into cell division that acts as a tumor suppressor. It also promotes G0-G1 transition when phosphorylated by CDK3/cyclin-C. The underphosphorylated, active form of RB1 interacts with E2F1 and represses its transcription activity, leading to cell cycle arrest. Rb is expressed in the retina. Mutations in the RB1 gene may result in retinoblastoma and bladder cancer. STJ95388 was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen. This polyclonal antibody detects endogenous levels of Rb protein.

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|-------------------------|--|
| Model | STJ95388 |
| Host | Rabbit |
| Reactivity | Human, Mouse, Rat |
| Applications | ELISA, IF, IHC, WB |
| Immunogen | Synthesized peptide derived from human Rb around the non-phosphorylation site of S780. |
| Immunogen Region | 720-800 aa |
| Gene ID | 5925 |
| Gene Symbol | RB1 |
| Dilution range | WB 1:500-1:2000IHC 1:100-1:300IF 1:200-1:1000ELISA 1:20000 |

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| Specificity | Rb Polyclonal Antibody detects endogenous levels of Rb protein. |
| Tissue Specificity | Expressed in the retina. |
| Purification | The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen. |
| Note | For Research Use Only (RUO). |
| Protein Name | Retinoblastoma-associated protein p105-Rb pRb Rb pp110 |
| Molecular Weight | 106 kDa |
| Clonality | Polyclonal |
| Conjugation | Unconjugated |
| Isotype | IgG |
| Formulation | Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide. |
| Concentration | 1 mg/ml |
| Storage Instruction | Store at -20°C, and avoid repeat freeze-thaw cycles. |
| Database Links | HGNC:9884OMIM:109800 |
| Alternative Names | Retinoblastoma-associated protein p105-Rb pRb Rb pp110 |
| Function | <p>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 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. 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.</p> |
| Sequence and Domain Family | The Pocket domain binds to the threonine-phosphorylated domain C, thereby preventing interaction with heterodimeric E2F/DP transcription factor complexes. |
| Cellular Localization | Nucleus |
| Post-translational Modifications | <p>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</p> |

with heterodimeric E2F/DP transcription factor complexes. Dephosphorylated at Ser-795 by calcineurin 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 METTL1A/NTM1 . Monomethylation at Lys-810 by SMYD2 enhances phosphorylation at Ser-807 and Ser-811, and promotes cell cycle progression. Monomethylation at Lys-860 by SMYD2 promotes interaction with L3MBTL1. Acetylation at Lys-873 and Lys-874 regulates subcellular localization, at least during keratinocytes differentiation.