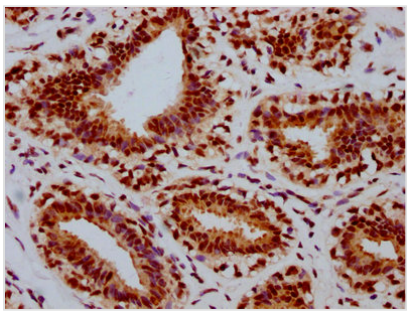
Phospho-RB1 (S780) Recombinant Monoclonal Antibody

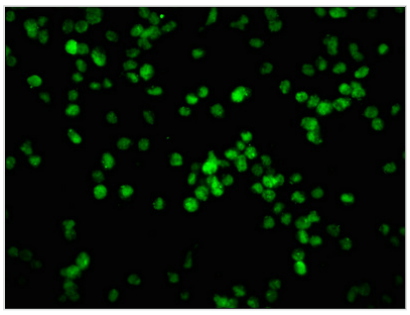
Product Code	CSB-RA019386A780phHU
Abbreviation	Retinoblastoma-associated protein
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	P06400
Immunogen	A synthesized peptide derived from Human Phospho-RB1 (S780)
Species Reactivity	Human
Tested Applications	ELISA, IHC, IF, IP; Recommended dilution: IHC:1:50-1:200, IF:1:20-1:200, IP:1:200-1:1000
Relevance	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 (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.
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Alias	Exon 17 tumor GOS561 substitution mutation causes premature stop antibody; GOS563 exon 17 substitution mutation causes premature stop antibody; OSRC antibody; Osteosarcoma antibody; p105-Rb antibody; P105RB antibody; PP105 antibody; pp110 antibody; PPP1R130 antibody; pRb antibody; Prepro retinoblastoma associated protein antibody; Protein phosphatase 1 regulatory

	subunit 130 antibody; Rb antibody; RB transcriptional corepressor 1 antibody; RB_HUMAN antibody; RB1 antibody; RB1 gene antibody; Retinoblastoma 1 antibody; Retinoblastoma suspectibility protein antibody; Retinoblastoma-associated protein antibody
Immunogen Species	Homo sapiens (Human)
Research Area	Cell Biology
Gene Names	RB1
Clone No.	2E9

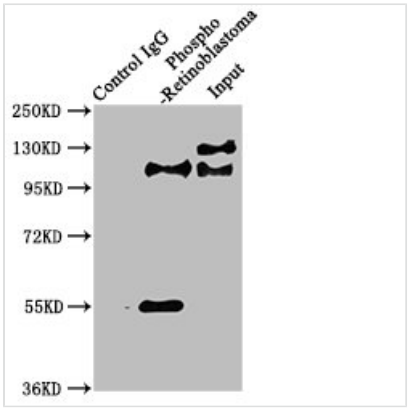
Image



IHC image of CSB-RA019386A780phHU diluted at 1:100 and staining in paraffin-embedded human breast cancer performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4? overnight. The primary is detected by a biotinylated secondary antibody and visualized using an HRP conjugated SP system.



Immunofluorescence staining of K562 cells with CSB-RA019386A780phHU at 1:100,counter-stained with DAPI. The cells were fixed in 4% formaldehyde, permeabilized using 0.2% Triton X-100 and blocked in 10% normal Goat Serum. The cells were then incubated with the antibody overnight at 4?. The secondary antibody was Alexa Fluor 488-congugated AffiniPure Goat Anti-Rabbit IgG (H+L).



Immunoprecipitating Phospho-RB1 in Hela whole cell lysate
Lane 1: Rabbit control IgG(1µg)instead of CSB-RA019386A780phHU in Hela whole cell lysate. For western blotting,a HRP-conjugated Protein G antibody was used as the secondary antibody (1/2000)
Lane 2: CSB-RA019386A780phHU(3µg)+ Hela whole cell lysate(1mg)
Lane 3: Hela whole cell lysate (20µg)

Description

In the production of the phospho-RB1 (S780) recombinant monoclonal antibody, the process commences with the extraction of RB1 antibody genes from immunized rabbits, originally exposed to a synthetic peptide derived from the human RB1 protein phosphorylated at S780. These isolated genes are then ingeniously inserted into expression vectors. Following this step, the modified vectors are skillfully introduced into host suspension cells, where they are

diligently cultivated to stimulate the production and secretion of the antibodies. Subsequently, the phospho-RB1 (S780) recombinant monoclonal antibody is subjected to a rigorous purification technique involving affinity chromatography, enabling the separation of the antibody from the surrounding cell culture supernatant. Ultimately, the antibody's functionality is comprehensively assessed across a spectrum of assays, encompassing ELISA, IHC, IF, and IP tests, thereby confirming its capability to interact with human RB1 protein phosphorylated at S780.

Phosphorylation of retinoblastoma 1 (RB1) at S780 is often associated with the transition from the G1 phase to the S phase of the cell cycle, where cells prepare for DNA replication. When phosphorylated at S780, RB1 becomes inactivated, leading to the release of E2F transcription factors and allowing them to promote the transcription of genes required for cell cycle progression and cell proliferation. Dysregulation of RB1 phosphorylation at S780 can contribute to uncontrolled cell proliferation and is frequently observed in various cancers.