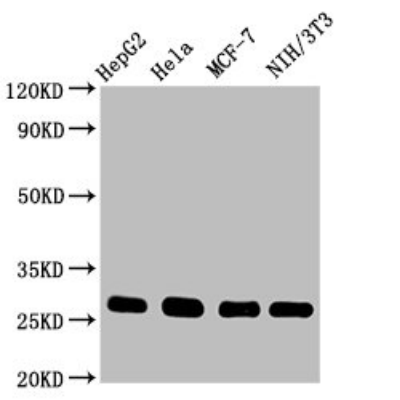
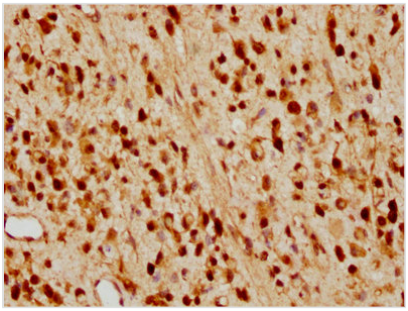
CDKN1B Recombinant Monoclonal Antibody

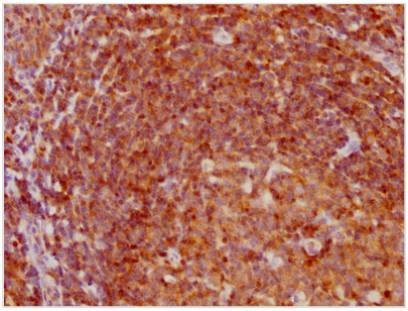
Product Code	CSB-RA005087A0HU
Abbreviation	Cyclin-dependent kinase inhibitor 1B
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	P46527
Immunogen	A synthesized peptide derived from human CDKN1B
Species Reactivity	Human, Mouse
Tested Applications	ELISA, WB, IHC, IF; Recommended dilution: WB:1:500-1:5000, IHC:1:50-1:200, IF:1:20-1:200
Relevance	Important regulator of cell cycle progression. Inhibits the kinase activity of CDK2 bound to cyclin A, but has little inhibitory activity on CDK2 bound to SPDYA (PubMed:28666995). Involved in G1 arrest. Potent inhibitor of cyclin E- and cyclin A-CDK2 complexes. Forms a complex with cyclin type D-CDK4 complexes and is involved in the assembly, stability, and modulation of CCND1-CDK4 complex activation. Acts either as an inhibitor or an activator of cyclin type D-CDK4 complexes depending on its phosphorylation state and/or stoichometry.
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	Cyclin-dependent kinase inhibitor 1B, Cyclin-dependent kinase inhibitor p27, CDKN1B, KIP1
Immunogen Species	Homo sapiens (Human)
Research Area	Cell Biology
Gene Names	CDKN1B
Clone No.	1G2
Image	



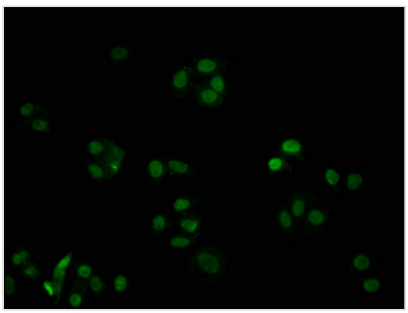
Western Blot
Positive WB detected in: HepG2 whole cell lysate, Hela whole cell lysate, MCF-7 whole cell lysate, NIH/3T3 whole cell lysate
All lanes: CDKN1B antibody at 0.9µg/ml
Secondary
Goat polyclonal to rabbit IgG at 1/50000 dilution
Predicted band size: 23 KDa
Observed band size: 27 KDa



IHC image of CSB-RA005087A0HU diluted at 1:97.5 and staining in paraffin-embedded human glioma 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.



IHC image of CSB-RA005087A0HU diluted at 1:97.5 and staining in paraffin-embedded human tonsil tissue 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 HepG2 cells with CSB-RA005087A0HU at 1:32.5, 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).

Description

The production of the CDKN1B recombinant monoclonal antibody involves the utilization of DNA recombinant technology and in vitro genetic manipulation. Initially, animals are immunized with a synthesized peptide derived from human CDKN1B, which triggers an immune response and allows for the isolation of B cells. Following a stringent screening process, positive B cells are identified and selected for further analysis. The genes encoding the light and heavy chains of the CDKN1B antibody are then amplified using PCR and inserted into a plasmid

vector, resulting in the creation of a recombinant vector. This recombinant vector is subsequently introduced into host cells, where it directs the expression of the antibody. The CDKN1B recombinant monoclonal antibody is purified from the cell culture supernatant using affinity chromatography. This purified antibody exhibits high specificity towards both human and CDKN1B protein and is tested for use in ELISA, WB, IHC, and IF applications.

The CDKN1B protein, also known as p27, plays a critical role in regulating the cell cycle by inhibiting the activity of CDKs. CDKN1B binds to and inhibits the activity of CDK-cyclin complexes, preventing the phosphorylation of key substrates that promote cell cycle progression. This ultimately leads to cell cycle arrest in the G1 phase, which allows for DNA repair, differentiation, or apoptosis. Additionally, CDKN1B is also involved in the regulation of cell migration, adhesion, and apoptosis.