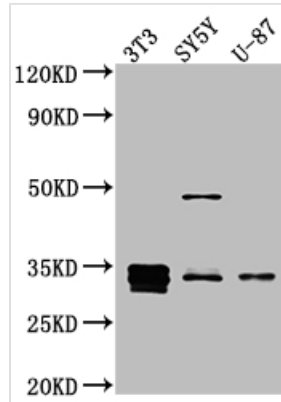




CCND1 Recombinant Monoclonal Antibody

Product Code	CSB-RA616025A0HU
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	P24385
Immunogen	A synthesized peptide derived from human Cyclin D1
Species Reactivity	Human, Mouse
Tested Applications	ELISA, WB; Recommended dilution: WB:1:500-1:5000
Relevance	Regulatory component of the cyclin D1-CDK4 (DC) complex that phosphorylates and inhibits members of the retinoblastoma (RB) protein family including RB1 and regulates the cell-cycle during G(1)/S transition. Phosphorylation of RB1 allows dissociation of the transcription factor E2F from the RB/E2F complex and the subsequent transcription of E2F target genes which are responsible for the progression through the G(1) phase. Hypophosphorylates RB1 in early G(1) phase. Cyclin D-CDK4 complexes are major integrators of various mitogenic and antimitogenic signals. Also substrate for SMAD3, phosphorylating SMAD3 in a cell-cycle-dependent manner and repressing its transcriptional activity. Component of the ternary complex, cyclin D1/CDK4/CDKN1B, required for nuclear translocation and activity of the cyclin D-CDK4 complex. Exhibits transcriptional corepressor activity with INSM1 on the NEUROD1 and INS promoters in a cell cycle-independent manner.
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
Product Type	Recombinant Antibody
Immunogen Species	Homo sapiens (Human)
Research Area	Epigenetics and Nuclear Signaling; Cancer; Cell biology
Gene Names	CCND1
Clone No.	5D8
Image	


Western Blot

Positive WB detected in: NIH/3T3 whole cell lysate, SH-SY5Y whole cell lysate, U-87 whole cell lysate

All lanes: Cyclin D1 antibody at 1:1000

Secondary

Goat polyclonal to rabbit IgG at 1/50000 dilution

Predicted band size: 34 kDa

Observed band size: 34 kDa

Description

The process of producing the CCND1 recombinant monoclonal antibody is intricate and multi-step. Initially, the CCND1 monoclonal antibody is collected and its genetic sequence is analyzed. A vector carrying the CCND1 monoclonal antibody gene is then constructed and incorporated into a host cell line for culturing. The CCND1 monoclonal antibody is generated using a synthetic peptide sourced from human CCND1 as an immunogen. Finally, the CCND1 recombinant monoclonal antibody is purified via affinity chromatography to ensure high purity. The antibody's specificity is then verified using ELISA and WB assays, which examine its ability to accurately identify CCND1. It detects human and mouse CCND1 proteins.

CCND1 protein is a regulatory protein that plays a critical role in cell cycle progression and cell differentiation. In response to extracellular signals, CCND1 is synthesized and binds to CDK4 or CDK6 to form an active complex that phosphorylates and inactivates the retinoblastoma protein (RB), leading to the release of E2F transcription factors thus promoting the expression of genes required for DNA replication and cell cycle progression. CCND1 promotes the differentiation of various cell types, including osteoblasts, adipocytes, and neurons, by regulating the activity of Runx2, PPARgamma, and CREB, respectively. Dysregulation of CCND1 can contribute to the development and progression of cancer.