SANTA CRUZ BIOTECHNOLOGY, INC.

Cdc6 (D-1): sc-13136

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cell cycle events are regulated by the sequential activation and deactivation of cyclin dependent kinases (Cdks) and by the proteolysis of cyclins. The cell division control (Cdc) genes are required at various points in the cell cycle. Cdc25A, Cdc25B and Cdc25C protein tyrosine phosphatases function as mitotic activators by dephosphorylating Cdc2 p34 on regulatory tyrosine residues. Cdc6 is the human homolog of *Saccharomyces cerevisiae* Cdc6, which is involved in the initiation of DNA replication. Cdc37 appears to facilitate Cdk4/cyclin D1 complex formation and has been shown to form a stable complex with HSP 90. Cdc34, Cdc27 and Cdc16 function as ubiquitin-conjugating enzymes. Cdc34 is thought to be the structural and functional homolog of *Saccharomyces cerevisiae* Cdc34, which is essential for the G_1 to S phase transition. Cdc16 and Cdc27 are components of the APC (anaphase-promoting complex) which ubiquitinates cyclin B, resulting in cyclin B/Cdk complex degradation.

CHROMOSOMAL LOCATION

Genetic locus: CDC6 (human) mapping to 17q21.2.

SOURCE

Cdc6 (D-1) is a mouse monoclonal antibody raised against amino acids 257-560 of Cdc6 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Cdc6 (D-1) is available conjugated to agarose (sc-13136 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13136 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13136 PE), fluorescein (sc-13136 FITC), Alexa Fluor® 488 (sc-13136 AF488), Alexa Fluor® 546 (sc-13136 AF546), Alexa Fluor® 594 (sc-13136 AF594) or Alexa Fluor® 647 (sc-13136 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13136 AF680) or Alexa Fluor® 790 (sc-13136 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Cdc6 (D-1) is recommended for detection of Cdc6 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Cdc6 siRNA (h): sc-29258, Cdc6 shRNA Plasmid (h): sc-29258-SH and Cdc6 shRNA (h) Lentiviral Particles: sc-29258-V.

Molecular Weight of Cdc6: 62 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

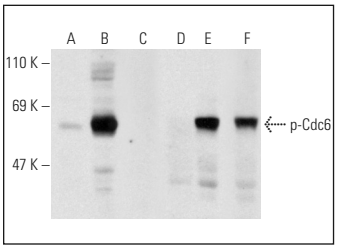
RESEARCH USE

For research use only, not for use in diagnostic procedures.

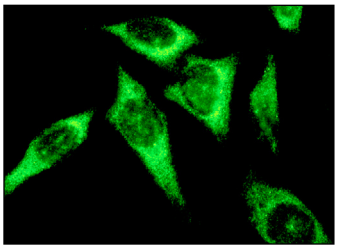
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



Western blot analysis of Cdc6 phosphorylation in untreated (**A**,**D**), serum starved and serum treated (**B**,**E**) and serum starved, serum treated and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) HeLa whole cell lysates. Antibodies tested include p-Cdc6 (Ser 54)-R: sc-12920-R (**A**,**B**,**C**) and Cdc6 (D-1): sc-13136 (**D**,**E**,**F**).



Cdc6 (D-1): sc-13136. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Pollok, S., et al. 2007. Cdc45 degradation during differentiation and apoptosis. Biochem. Biophys. Res. Commun. 362: 910-915.
2. Paolinelli, R., et al. 2009. Acetylation by GCN5 regulates Cdc6 phosphorylation in the S phase of the cell cycle. Nat. Struct. Mol. Biol. 16: 412-420.
3. Revenko, A.S., et al. 2010. Chromatin loading of E2F-MLL complex by cancer-associated coregulator ANCCA via reading a specific histone mark. Mol. Cell. Biol. 30: 5260-5272.
4. Lane, K.R., et al. 2013. Cell cycle-regulated protein abundance changes in synchronously proliferating HeLa cells include regulation of pre-mRNA splicing proteins. PLoS ONE 8: e58456.
5. Greil, C., et al. 2015. The role of APC/C^{Cdh1} in replication stress and origin of genomic instability. Oncogene 35: 3062-3070.
6. Huang, S., et al. 2016. DNA replication initiator Cdc6 also regulates ribosomal DNA transcription initiation. J. Cell Sci. 129: 1429-1440.
7. Xu, X., et al. 2017. DNA replication licensing factor Cdc6 and Plk4 kinase antagonistically regulate centrosome duplication via Sas-6. Nat. Commun. 8: 15164.
8. Lee, I., et al. 2017. The DNA replication protein Cdc6 inhibits the microtubule-organizing activity of the centrosome. J. Biol. Chem. 292: 16267-16276.
9. Liu, H., et al. 2022. The non-specific lethal (NSL) histone acetyltransferase complex transcriptionally regulates Yin Yang 1-mediated cell proliferation in human cells. Int. J. Mol. Sci. 23: 3801.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.