

## Cdc45 (E-3): sc-55568



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 cycle (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 and Cdc45 are the mammalian homologs of *S. cerevisiae* Cdc6 and Cdc45, which are 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 *S. cerevisiae* Cdc34, which is essential for the G<sub>1</sub>/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.

## REFERENCES

- Palmer, R.E., et al. 1990. Mitotic transmission of artificial chromosomes in Cdc mutants of the yeast, *Saccharomyces cerevisiae*. *Genetics* 125: 763-774.
- Gautier, J., et al. 1991. Cdc25 is a specific tyrosine phosphatase that directly activates p34<sup>Cdc2</sup>. *Cell* 67: 197-211.

## CHROMOSOMAL LOCATION

Genetic locus: CDC45L (human) mapping to 22q11.21; Cdc45l (mouse) mapping to 16 A3.

## SOURCE

Cdc45 (E-3) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of Cdc45 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Cdc45 (E-3) is recommended for detection of Cdc45 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), 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 Cdc45 siRNA (h): sc-35044, Cdc45 siRNA (m): sc-35045, Cdc45 shRNA Plasmid (h): sc-35044-SH, Cdc45 shRNA Plasmid (m): sc-35045-SH, Cdc45 shRNA (h) Lentiviral Particles: sc-35044-V and Cdc45 shRNA (m) Lentiviral Particles: sc-35045-V.

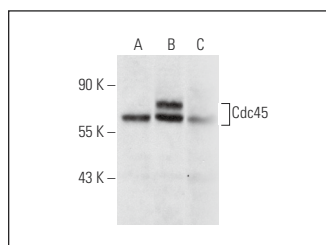
Molecular Weight of Cdc45: 60 kDa.

Positive Controls: Cdc45 (h3): 293T Lysate: sc-175019, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

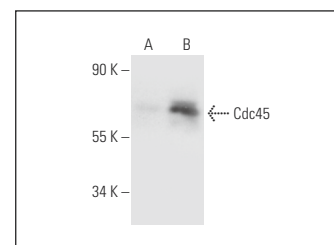
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



Cdc45 (E-3): sc-55568. Western blot analysis of Cdc45 expression in non-transfected 293T: sc-117752 (A), human Cdc45 transfected 293T: sc-128289 (B) and Jurkat (C) whole cell lysates.



Cdc45 (E-3): sc-55568. Western blot analysis of Cdc45 expression in non-transfected: sc-117752 (A) and human Cdc45 transfected: sc-175019 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

- Larrieu, D., et al. 2009. ING2 controls the progression of DNA replication forks to maintain genome stability. *EMBO Rep.* 10: 1168-1174.
- Larrieu, D., et al. 2010. ING2 controls the G<sub>1</sub> to S-phase transition by regulating p21 expression. *Cell Cycle* 9: 3984-3990.
- Tan, B.C., et al. 2010. Functional cooperation between FACT and MCM is coordinated with cell cycle and differential complex formation. *J. Biomed. Sci.* 17: 11.
- Dixit, S., et al. 2024. RTEL1 helicase counteracts RAD51-mediated homologous recombination and fork reversal to safeguard replicating genomes. *Cell Rep.* 43: 114594.

## STORAGE

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

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.