SANTA CRUZ BIOTECHNOLOGY, INC.

Cdc25A (DCS-120): sc-56264

BACKGROUND

The Cdc2/cyclin B enzyme, involved in regulation of mitosis in eukaryotic cells, is subject to multiple levels of control. Among these, the regulation of the catalytic subunit by Tyrosine phosphorylation is the best understood. Tyrosine phosphorylation inhibits the Cdc2/cyclin B complex, while Tyrosine dephosphorylation, which occurs at the onset of mitosis, directly activates the pre-MPH complex. The Cdc25 gene serves as a rate-limiting mitotic activator, apparently due to its action as the Cdc2 Tyrosine phosphatase. In the absence of Cdc25, Cdc2 accumulates in a Tyrosine phosphorylated state. In addition, Cdc25 proteins from a variety of species have been shown to share a low degree of sequence similarity with other Tyrosine phosphatases. The Cdc25 gene family consists of at least three members that share approximately 40% identity in their most conserved carboxy terminal sequences.

REFERENCES

1. Murray, A.W., et al., 1989. Dominoes and clocks: the union of two views of the cell cycle. Science 246: 614-621.
2. Gould, K., et al. 1989. Tyrosine phosphorylation of the fission Cdc2 protein kinase regulates entry into mitosis. Nature 342: 39-45.

CHROMOSOMAL LOCATION

Genetic locus: CDC25A (human) mapping to 3p21.31; Cdc25a (mouse) mapping to 9 F2.

SOURCE

Cdc25A (DCS-120) is a mouse monoclonal antibody raised against purified recombinant Cdc25A.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Cdc25A (DCS-120) is recommended for detection of Cdc25A of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Cdc25A siRNA (h): sc-29254, Cdc25A siRNA (m): sc-35037, Cdc25A shRNA Plasmid (h): sc-29254-SH, Cdc25A shRNA Plasmid (m): sc-35037-SH, Cdc25A shRNA (h) Lentiviral Particles: sc-29254-V and Cdc25A shRNA (m) Lentiviral Particles: sc-35037-V.

Molecular Weight of Cdc25A: 67 kDa.

Positive Controls: A549 cell lysate: sc-2413, Hep G2 cell lysate: sc-2227 or K-562 whole cell lysate: sc-2203.

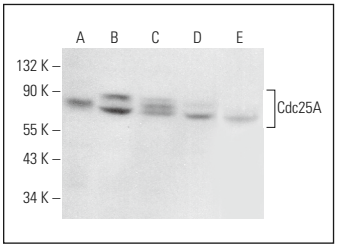
RESEARCH USE

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

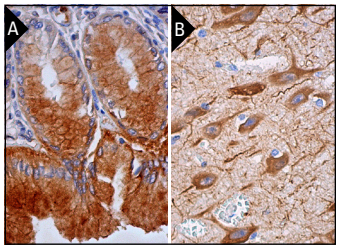
STORAGE

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

DATA



Cdc25A (DCS-120): sc-56264. Western blot analysis of Cdc25A expression in K-562 (**A**), A549 (**B**), Hep G2 (**C**), WEHI-231 (**D**) and 3611-RF (**E**) whole cell lysates.



Cdc25A (DCS-120): sc-56264. Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing cytoplasmic and membrane staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic staining of neuronal cells and neuropil staining (**B**).

SELECT PRODUCT CITATIONS

1. Mattarocci, S., et al. 2014. Identification of pivotal cellular factors involved in HPV-induced dysplastic and neoplastic cervical pathologies. J. Cell. Physiol. 229: 463-470.
2. Kiss, K., et al. 2015. Chronic hyperglycemia induces *trans*-differentiation of human pancreatic stellate cells and enhances the malignant molecular communication with human pancreatic cancer cells. PLoS ONE 10: e0128059.
3. Cizkova, K., et al. 2016. Stimulating effect of normal-dosing of fibrates on cell proliferation: word of warning. Lipids Health Dis. 15: 164.
4. Skrott, Z., et al. 2017. Alcohol-abuse drug disulfiram targets cancer via p97 segregase adaptor NPL4. Nature 552: 194-199.
5. Darband, S.G., et al. 2020. Quercetin attenuated oxidative DNA damage through NRF2 signaling pathway in rats with DMH induced colon carcinogenesis. Life Sci. 253: 117584.
6. Petragnano, F., et al. 2020. Clinically relevant radioresistant rhabdomyosarcoma cell lines: functional, molecular and immune-related characterization. J. Biomed. Sci. 27: 90.
7. Chung, C.Y.T., et al. 2020. Babam2 regulates cell cycle progression and pluripotency in mouse embryonic stem cells as revealed by induced DNA damage. Biomedicines 8: 397.
8. Rødland, G.E., et al. 2021. Differential effects of combined ATR/WEE1 inhibition in cancer cells. Cancers 13: 3790.

CONJUGATES

See **Cdc25A (F-6): sc-7389** for Cdc25A antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.