SANTA CRUZ BIOTECHNOLOGY, INC.

cyclin A1 (H-230): sc-15383

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The Power to Question

BACKGROUND

The critical role that the family of regulatory proteins known as cyclins play in eukaryotic cell cycle regulation is well established. The best-characterized cyclin complex is the mitotic cyclin B/Cdc2 p34 kinase, the active component of maturing promoting factor. Cyclin A accumulates prior to cyclin B in the cell cycle, appears to be involved in control of S phase and has been shown to associate with cyclin-dependent kinase-2 (Cdk2). In addition, cyclin A has been implicated in cell transformation and is found in complexes with E1A, transcription factors DRTF1 and E2F, and retinoblastoma protein p110. A second form of cyclin A, named cyclin A1 because of its high sequence homology to *Xenopus* cyclin A1, is most highly expressed in germ cells. It has been proposed that cyclin A1 can associate with Cdk2, p39 and Cdc2 p34.

REFERENCES

1. Draetta, G., et al. 1989. Cdc2 protein kinase is complexed with both cyclin A and B: evidence for proteolytic inactivation of MPF. Cell 56: 829-838.
2. Giordano, A., et al. 1989. A 60 kDa Cdc2-associated polypeptide complexes with the E1A proteins in adenovirus-infected cells. Cell 58: 981-990.
3. Gautier, J., et al. 1990. Cyclin is a component of maturation-promoting factor from *Xenopus*. Cell 60: 487-494.
4. Wang, J., et al. 1990. Hepatitis B virus integration in a cyclin A gene in a hepatocellular carcinoma. Nature 343: 555-557.

CHROMOSOMAL LOCATION

Genetic locus: CCNA1 (human) mapping to 13q13.3; Ccna1 (mouse) mapping to 3 C.

SOURCE

cyclin A1 (H-230) is a rabbit polyclonal antibody raised against amino acids 1-230 mapping at the N-terminus of cyclin A1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

cyclin A1 (H-230) is recommended for detection of cyclin A1 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for cyclin A1 siRNA (h): sc-37592, cyclin A1 siRNA (m): sc-37593, cyclin A1 shRNA Plasmid (h): sc-37592-SH, cyclin A1 shRNA Plasmid (m): sc-37593-SH, cyclin A1 shRNA (h) Lentiviral Particles: sc-37592-V and cyclin A1 shRNA (m) Lentiviral Particles: sc-37593-V.

Molecular Weight of cyclin A1: 65 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, Hep G2 cell lysate: sc-2227 or U-937 cell lysate: sc-2239.

SELECT PRODUCT CITATIONS

1. Ekberg, J., et al. 2004. Regulation of the cyclin A1 protein is associated with its differential subcellular localization in hematopoietic and leukemic cells. Oncogene 23: 9082-9089.
2. Katabami, M. 2005. Cyclin A is a c-Jun target gene and is necessary for c-Jun-induced anchorage-independent growth in RAT1a cells. J. Biol. Chem. 280: 16728-16738.
3. Croft, D.R, et al. 2006. The Rho GTPase effector ROCK regulates cyclin A, cyclin D1, and $p27^{Kip1}$ levels by distinct mechanisms. Mol. Cell. Biol. 26: 4612-4627.
4. Escandell, J.M., et al. 2007. Dihydrocucurbitacin B inhibits delayed type hypersensitivity reactions by suppressing lymphocyte proliferation. J. Pharmacol. Exp. 322: 1261-1268.
5. Zhang, J.Y., et al. 2007. Tumor necrosis factor receptor 1/c-Jun-NH_2-kinase signaling promotes human neoplasia. Cancer Res. 67: 3827-3834.
6. Restle, A., et al. 2008. Dissecting the role of p53 phosphorylation in homologous recombination provides new clues for gain-of-function mutants. Nucleic Acids Res. 36: 5362-5375.
7. Plant, K.E., et al. 2009. The neuroprotective action of the mood stabilizing drugs lithium chloride and sodium valproate is mediated through the up-regulation of the homeodomain protein Six1. Toxicol. Appl. Pharmacol. 235: 124-134.
8. Volle, D.H., et al. 2009. The orphan nuclear receptor small heterodimer partner mediates male infertility induced by diethylstilbestrol in mice. J. Clin. Invest. 119: 3752-3764.
9. Federico, M., et al. 2010. R-roscovitine (Seliciclib) prevents DNA damage-induced cyclin A1 upregulation and hinders non-homologous end-joining (NHEJ) DNA repair. Mol. Cancer 9: 208.
10. McLenachan, S., et al. 2012. Cyclin A1 is essential for setting the pluripotent state and reducing tumorigenicity of induced pluripotent stem cells. Stem Cells Dev. 21: 2891-2899.

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 or our catalog for detailed protocols and support products.