cyclin A (E72.1): sc-53232

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BIOTECHNOLOGY

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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.

5. Pines, J., et al. 1990. Human cyclin A is adenovirus E1A-associated protein p60 and behaves differently from cyclin B. Nature 346: 760-763.

6. Bandara, L.R., et al. 1991. Cyclin A and the retinoblastoma gene product complex with a common transcription factor. Nature 352: 249-251.

7. Williams, R.T., et al. 1992. Co-purification of p34cdc2/p58 cyclin A proline-directed protein kinase and the retinoblastoma tumor susceptibility gene product: interaction of an oncogenic serine/threonine protein kinase with a tumor-suppressor protein. Oncogene 7: 423-432.

CHROMOSOMAL LOCATION

Genetic locus: CCNA2 (human) mapping to 4q27; Ccna2 (mouse) mapping to 3 B.

SOURCE

cyclin A (E72.1) is a mouse monoclonal antibody raised against cyclin A of bovine 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.

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.

APPLICATIONS

cyclin A (E72.1) is recommended for detection of cyclin A 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

cyclin A (E72.1) is also recommended for detection of cyclin A in additional species, including bovine.

Suitable for use as control antibody for cyclin A siRNA (h): sc-29282, cyclin A siRNA (m): sc-29283, cyclin A shRNA Plasmid (h): sc-29282-SH, cyclin A shRNA Plasmid (m): sc-29283-SH, cyclin A shRNA (h) Lentiviral Particles: sc-29282-V and cyclin A shRNA (m) Lentiviral Particles: sc-29283-V.
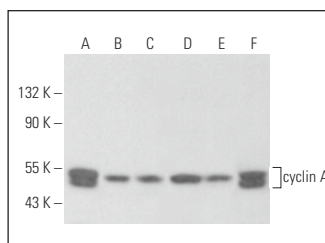
Molecular Weight of cyclin A: 54 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, F9 cell lysate: sc-2245 or HuT 78 whole cell lysate: sc-2208.
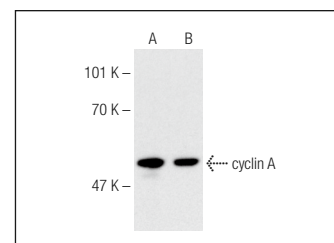
RECOMMENDED SUPPORT REAGENTS

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

cyclin A (E72.1): sc-53232. Western blot analysis of cyclin A expression in K-562 (**A**), A-431 (**B**), Caco-2 (**C**), F9 (**D**), NTERA-2 cl.D1 (**E**) and HL-60 (**F**) whole cell lysates.

cyclin A (E72.1): sc-53232. Western blot analysis of cyclin A expression in K-562 (**A**) and HuT 78 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Liu, J., et al. 2020. APC/Cdh1 targets PECAM-1 for ubiquitination and degradation in endothelial cells. J. Cell. Physiol. 235: 2521-2531.

CONJUGATES

See **cyclin A (B-8): sc-271682** for cyclin A antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.