

cyclin A (B-8): sc-271682

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.

CHROMOSOMAL LOCATION

Genetic locus: CCNA2 (human) mapping to 4q27, CCNA1 (human) mapping to 13q13.3.

SOURCE

cyclin A (B-8) is a mouse monoclonal antibody raised against amino acids 1-432 representing full length cyclin A of human origin.

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. Also available as TransCruz reagent for ChIP application, sc-271682 X, 200 µg/0.1 ml.

cyclin A (B-8) is available conjugated to agarose (sc-271682 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271682 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271682 PE), fluorescein (sc-271682 FITC), Alexa Fluor® 488 (sc-271682 AF488), Alexa Fluor® 546 (sc-271682 AF546), Alexa Fluor® 594 (sc-271682 AF594) or Alexa Fluor® 647 (sc-271682 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271682 AF680) or Alexa Fluor® 790 (sc-271682 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

cyclin A (B-8) is recommended for detection of cyclin A and cyclin A1 of 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

cyclin A (B-8) X TransCruz antibody is recommended for ChIP assays.

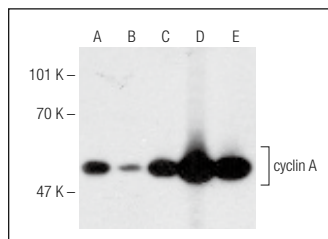
Molecular Weight of cyclin A: 54 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or HuT 78 whole cell lysate: sc-2208.

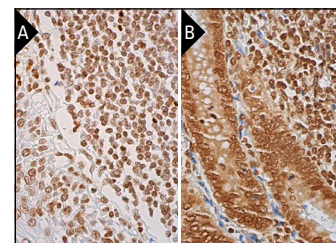
STORAGE

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

DATA



cyclin A (B-8): sc-271682. Western blot analysis of cyclin A expression in SK-BR-3 (A), A-431 (B), HeLa (C), K-562 (D) and HuT 78 (E) whole cell lysates.



cyclin A (B-8): sc-271682. Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing nuclear staining of cells in germinal center, cells in non-germinal center and squamous epithelial cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing nuclear and cytoplasmic staining of glandular cells and nuclear staining of lymphoid cells (B).

SELECT PRODUCT CITATIONS

- Xu, T., et al. 2013. ECRG4 inhibits growth and invasiveness of squamous cell carcinoma of the head and neck *in vitro* and *in vivo*. *Oncol. Lett.* 5: 1921-1926.
- Di Marco, S., et al. 2017. RECQ5 helicase cooperates with MUS81 endonuclease in processing stalled replication forks at common fragile sites during mitosis. *Mol. Cell* 66: 658-671.e8.
- Botuyan, M.V., et al. 2018. Mechanism of 53BP1 activity regulation by RNA-binding TIRR and a designer protein. *Nat. Struct. Mol. Biol.* 25: 591-600.
- Nasser, M.I., et al. 2019. Inhibitory effects of Schisandrin B on human prostate cancer cells. *Oncol. Rep.* 41: 677-685.
- Kim, S., et al. 2020. PRMT6-mediated H3R2me2a guides Aurora B to chromosome arms for proper chromosome segregation. *Nat. Commun.* 11: 612.
- Rodriguez-Cupello, C., et al. 2020. The STRIPAK complex regulates response to chemotherapy through p21 and p27. *Front. Cell Dev. Biol.* 8: 146.
- Li, L., et al. 2021. Carvacrol affects breast cancer cells through TRPM7 mediated cell cycle regulation. *Life Sci.* 266: 118894.
- Knudsen, E.S., et al. 2022. CDK/cyclin dependencies define extreme cancer cell-cycle heterogeneity and collateral vulnerabilities. *Cell Rep.* 38: 110448.
- Scarth, J.A., et al. 2023. Exploitation of ATP-sensitive potassium ion (KATP) channels by HPV promotes cervical cancer cell proliferation by contributing to MAPK/AP-1 signalling. *Oncogene* 42: 2558-2577.
- Mutso, M., et al. 2024. The methyltransferase N6AMT1 participates in the cell cycle by regulating cyclin E levels. *PLoS ONE* 19: e0298884.

RESEARCH USE

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