

# cyclin A2 (46B11): sc-53234

## BACKGROUND

Cyclin A2 is a member of the highly conserved cyclin family. Cyclins regulate CDK kinases and different cyclins exhibit distinct expression and degradation patterns which contribute to the temporal coordination of each mitotic event. Cyclin A2 is expressed in all tissues tested, in contrast to cyclin A1, which is present only in germ cells. The cyclin A2 protein binds and activates CDC2 or Cdk2 kinases, and thus promotes both cell cycle G<sub>1</sub>/S and G<sub>2</sub>/M transitions. Cyclin A2 also functions in the transition to DNA replication and synthesis phases of the cell cycle and is quickly destroyed as the cell moves into mitosis.

## REFERENCES

1. Howe, J.A., Howell, M., Hunt, T. and Newport, J.W. 1995. Identification of a developmental timer regulating the stability of embryonic cyclin A and a new somatic A-type cyclin at gastrulation. *Genes Dev.* 9: 1164-1176.
2. Sweeney, C., Murphy, M., Kubelka, M., Ravnik, S.E., Hawkins, C.F., Wolgemuth, D.J. and Carrington, M. 1996. A distinct cyclin A is expressed in germ cells in the mouse. *Development* 122: 53-64.
3. Ravnik, S.E. and Wolgemuth, D.J. 1996. The developmentally restricted pattern of expression in the male germ line of a murine cyclin A, cyclin A2, suggests roles in both mitotic and meiotic cell cycles. *Dev. Biol.* 173: 69-78.
4. Murphy, M., Stinnakre, M.G., Senamaud-Beaufort, C., Winston, N.J., Sweeney, C., Kubelka, M., Carrington, M., Brechot, C. and Sobczak-Thepot, J. 1997. Delayed early embryonic lethality following disruption of the murine cyclin A2 gene. *Nat. Genet.* 15: 83-86.

## SOURCE

cyclin A2 (46B11) is a mouse monoclonal antibody raised against SDS-derived male-cyclin A2 fusion protein of *Xenopus* 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.

cyclin A2 (46B11) is available conjugated to agarose (sc-53234 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53234 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53234 PE), fluorescein (sc-53234 FITC), Alexa Fluor® 488 (sc-53234 AF488), Alexa Fluor® 546 (sc-53234 AF546), Alexa Fluor® 594 (sc-53234 AF594) or Alexa Fluor® 647 (sc-53234 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53234 AF680) or Alexa Fluor® 790 (sc-53234 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

cyclin A2 (46B11) is recommended for detection of cyclin A2 of *Xenopus laevis* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Molecular Weight of cyclin A2: 27 kDa.

## 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.

## SELECT PRODUCT CITATIONS

1. Song, M.S., Carracedo, A., Salmena, L., Song, S.J., Egia, A., Malumbres, M. and Pandolfi, P.P. 2011. Nuclear PTEN regulates the APC-CDH1 tumor-suppressive complex in a phosphatase-independent manner. *Cell* 144: 187-199.
2. Tang, H., Ji, F., Sun, J., Xie, Y., Xu, Y. and Yue, H. 2016. RBEL1 is required for osteosarcoma cell proliferation via inhibiting retinoblastoma 1. *Mol. Med. Rep.* 13: 1275-1280.
3. Qiu, N., Fang, W.J., Li, H.S., He, Z.M., Xiao, Z.S. and Xiong, Y. 2018. Impairment of primary cilia contributes to visceral adiposity of high fat diet-fed mice. *J. Cell. Biochem.* 119: 1313-1325.
4. Hellmuth, S., Gómez-H, L., Pendás, A.M. and Stemmann, O. 2020. Securin-independent regulation of separase by checkpoint-induced shugoshin-MAD2. *Nature* 580: 536-541.
5. Hellmuth, S. and Stemmann, O. 2020. Separase-triggered apoptosis enforces minimal length of mitosis. *Nature* 580: 542-547.
6. Moustafa-Kamal, M., Kucharski, T.J., El-Assaad, W., Abbas, Y.M., Gandin, V., Nagar, B., Pelletier, J., Topisirovic, I. and Teodoro, J.G. 2020. The mTORC1/S6K/PDCD4/eIF4A axis determines outcome of mitotic arrest. *Cell Rep.* 33: 108230.
7. Sun, Y., Wang, Z., Na, L., Dong, D., Wang, W. and Zhao, C. 2020. FZD5 contributes to TNBC proliferation, DNA damage repair and stemness. *Cell Death Dis.* 11: 1060.

## 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.