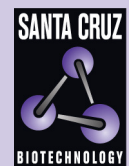


## cyclin K (R-17): sc-81842



The Power to Question

## BACKGROUND

Positive transcription elongation factor  $\beta$  (P-TEF $\beta$ ) complexes are crucial for allowing the elongation of RNA by RNA polymerase II (RNAPII). These complexes are able to phosphorylate the carboxyl-terminal domain of the largest RNAPII subunit. P-TEF $\beta$  complexes are made up of a catalytic subunit, cyclin dependent kinase 9 (Cdk9), and one of the regulatory cyclins, CycT1, CycT2a, CycT2b or cyclin K. Specifically, cyclin K forms an active P-TEF $\beta$  complex with Cdk9. This complex promotes transcription by phosphorylating the carboxyl-terminal domain of RNAPII which allows the elongation of transcription to proceed. Cyclin K is ubiquitously expressed in adult mouse and human tissues, with highest levels expressed in the developing germ cells of adult testis and ovaries. Cyclin K is also present in HepG2 cells. The cyclin K gene encodes a 357 amino acid protein and maps to human chromosome 14q32.2.

## REFERENCES

1. Edwards, M.C., et al. 1998. Human cyclin K, a novel RNA polymerase II-associated cyclin possessing both carboxy-terminal domain kinase and Cdk-activating kinase activity. *Mol. Cell. Biol.* 7: 4291-4300.
2. Fu, T.J., et al. 1999. Cyclin K functions as a CDK9 regulatory subunit and participates in RNA polymerase II transcription. *J. Biol. Chem.* 274: 34527-34530.
3. Lin, X., et al. 2002. P-TEF $\beta$  containing cyclin K and Cdk9 can activate transcription via RNA. *J. Biol. Chem.* 277: 16873-16878.
4. Mori, T., et al. 2002. Cyclin K as a direct transcriptional target of the p53 tumor suppressor. *Neoplasia* 4: 268-274.
5. Lundquist, A., et al. 2003. Kaposi sarcoma-associated viral cyclin K overrides cell growth inhibition mediated by Oncostatin M through Stat3 inhibition. *Blood* 101: 4070-4077.
6. SWISS-PROT/TrEMBL (O75909). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>.

## CHROMOSOMAL LOCATION

Genetic locus: CCNK (human) mapping to 14q32.2; Ccnk (mouse) mapping to 12 F1.

## SOURCE

cyclin K (R-17) is a mouse monoclonal antibody raised against recombinant cyclin K of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g 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 K (R-17) is recommended for detection of cyclin K of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for cyclin K siRNA (h): sc-37600, cyclin K siRNA (m): sc-142657, cyclin K shRNA Plasmid (h): sc-37600-SH, cyclin K shRNA Plasmid (m): sc-142657-SH, cyclin K shRNA (h) Lentiviral Particles: sc-37600-V and cyclin K shRNA (m) Lentiviral Particles: sc-142657-V.

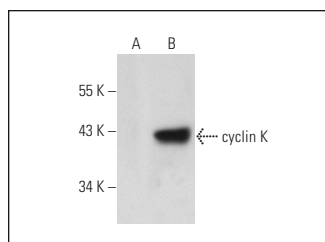
Molecular Weight of cyclin K: 64 kDa.

Positive Controls: cyclin K (h): 293 Lysate: sc-111838 or RC/PRF/5 whole cell lysate.

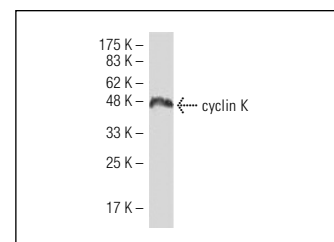
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



cyclin K (R-17): sc-81842. Western blot analysis of cyclin K expression in non-transfected: sc-110760 (A) and human cyclin K transfected: sc-111838 (B) 293 whole cell lysates.



cyclin K (R-17): sc-81842. Western blot analysis of cyclin K expression in PRC/PRF/5 whole cell lysate.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.