

cyclin K (h): 293 Lysate: sc-111838

BACKGROUND

Positive transcription elongation factor b (P-TEFb) 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-TEFb complexes are made up of a catalytic subunit, cyclin dependent kinase 9 (Cdk9), and one of the regulatory cyclins, cyclin T1, cyclin T2 α , cyclin T2 β or cyclin K. Specifically, cyclin K forms an active P-TEFb 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 Hep G₂ cells. The cyclin K gene encodes a 357 amino acid protein and maps to human chromosome 14q32.2.

REFERENCES

1. Edwards, M.C., Wong, C. and Elledge, S.J. 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., Peng, J., Lee, G., Price, D.H. and Flores, O. 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., Taube, R., Fujinaga, K. and Peterlin, B.M. 2002. P-TEFb containing cyclin K and Cdk9 can activate transcription via RNA. *J. Biol. Chem.* 277: 16873-16878.
4. Mori, T., Anazawa, Y., Matsui, K., Fukuda, S., Nakamura, Y. and Arakawa, H. 2002. Cyclin K as a direct transcriptional target of the p53 tumor suppressor. *Neoplasia* 4: 268-274.
5. Lundquist, A., Barré, B., Bienvu, F., Hermann, J., Avril, S. and Coqueret, O. 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.

PRODUCT

cyclin K (h): 293 Lysate represents a lysate of human cyclin K transfected 293 cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

APPLICATIONS

cyclin K (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive cyclin K antibodies. Recommended use: 10-20 μ l per lane.

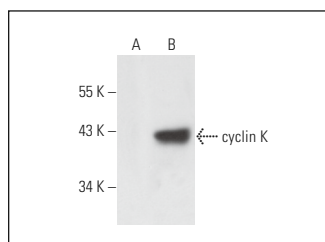
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

cyclin K (R-17): sc-81842 is recommended as a positive control antibody for Western Blot analysis of enhanced human cyclin K expression in cyclin K transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

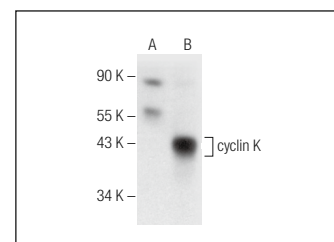
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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.

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 (G-11): sc-376371. 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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.