

## cyclin K (C-14): sc-22084



The Power to Question

## BACKGROUND

Positive transcription elongation factor b (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

- 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.
- 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.
- Lin, X., et al. 2002. P-TEF $\beta$  containing cyclin K and Cdk9 can activate transcription via RNA. *J. Biol. Chem.* 277: 16873-16878.
- Mori, T., et al. 2002. Cyclin K as a direct transcriptional target of the p53 tumor suppressor. *Neoplasia* 4: 268-274.
- 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.
- 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.

## SOURCE

cyclin K (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of cyclin K of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-22084 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

cyclin K (C-14) is recommended for detection of cyclin K of 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)], immunofluorescence (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 K (C-14) is also recommended for detection of cyclin K in additional species, including porcine.

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

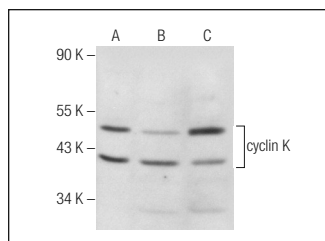
Molecular Weight of cyclin K: 64 kDa.

Positive Controls: ME-180 whole cell lysate, SW480 cell lysate: sc-2219, HeLa whole cell lysate: sc-2200.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), 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). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



cyclin K (C-14): sc-22084. Western blot analysis of cyclin K expression in SW480 (A), HeLa (B) and ME-180 (C) whole cell lysates.

## RESEARCH USE

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

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Try **cyclin K (G-11): sc-376371** or **cyclin K (R-17): sc-81842**, our highly recommended monoclonal alternatives to cyclin K (C-14).