SANTA CRUZ BIOTECHNOLOGY, INC.

cyclin K (G-11): sc-376371

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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, CycT1, CycT2a, CycT2b 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.

CHROMOSOMAL LOCATION

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

SOURCE

cyclin K (G-11) is a mouse monoclonal antibody raised against amino acids 107-286 mapping within an internal region of cyclin K of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

cyclin K (G-11) is available conjugated to agarose (sc-376371 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376371 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376371 PE), fluorescein (sc-376371 FITC), Alexa Fluor® 488 (sc-376371 AF488), Alexa Fluor® 546 (sc-376371 AF546), Alexa Fluor® 594 (sc-376371 AF594) or Alexa Fluor® 647 (sc-376371 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376371 AF680) or Alexa Fluor® 790 (sc-376371 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

cyclin K (G-11) is recommended for detection of cyclin K of mouse, rat and 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) 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.

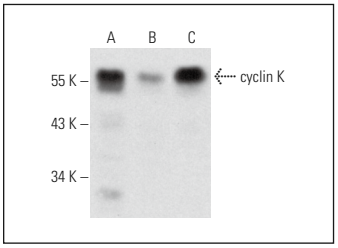
Molecular Weight of cyclin K: 64 kDa.

Positive Controls: NTERA-2 cl.D1 whole cell lysate: sc-364181, HeLa whole cell lysate: sc-2200 or Hep G2 cell lysate: sc-2227.

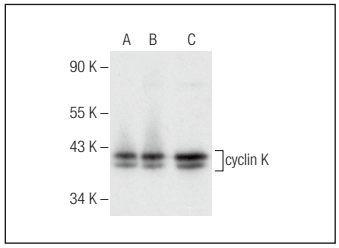
STORAGE

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

DATA



cyclin K (G-11): sc-376371. Western blot analysis of cyclin K expression in SW480 (**A**), ME-180 (**B**) and c4 (**C**) whole cell lysates.



cyclin K (G-11): sc-376371. Western blot analysis of cyclin K expression in HeLa (**A**), Hep G2 (**B**) and NTERA-2 cl.D1 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Paculová, H., et al. 2017. BRCA1 or CDK12 loss sensitizes cells to Chk1 inhibitors. Tumour Biol. 39: 1010428317727479.
2. Shiozaki, Y., et al. 2018. The Cdk9-cyclin T1 complex mediates saturated fatty acid-induced vascular calcification by inducing expression of the transcription factor CHOP. J. Biol. Chem. 293: 17008-17020.
3. Chirackal Manavalan, A.P., et al. 2019. CDK12 controls G_1/S progression by regulating RNAPII processivity at core DNA replication genes. EMBO Rep. 20: e47592.
4. Zuryn, A., et al. 2019. Expression of cyclin B1, D1 and K in non-small cell lung cancer H1299 cells following treatment with sulforaphane. Oncol. Rep. 41: 1313-1323.
5. Tellier, M., et al. 2020. CDK12 globally stimulates RNA polymerase II transcription elongation and carboxyl-terminal domain phosphorylation. Nucleic Acids Res. 48: 7712-7727.
6. Isa, N.F., et al. 2021. HSV-1 ICP22 is a selective viral repressor of cellular RNA polymerase II-mediated transcription elongation. Vaccines 9: 1054.
7. Jorda, R., et al. 2022. 3,5,7-substituted pyrazolo[4,3-d]pyrimidine inhibitors of cyclin-dependent kinases and cyclin K degraders. J. Med. Chem. 65: 8881-8896.
8. Cheng, L., et al. 2022. Dual inhibition of CDK12/CDK13 targets both tumor and immune cells in ovarian cancer. Cancer Res. 82: 3588-3602.
9. Zhang, Z., et al. 2024. Dual-site molecular glues for enhancing protein-protein interactions of the CDK12-DDB1 complex. Nat. Commun. 15: 6477.

RESEARCH USE

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

PROTOCOLS

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