

## Cdk9 (D-7): sc-13130



The Power to Question

## BACKGROUND

A family of proteins designated cyclin dependent kinases (Cdks) are critical regulators of cell cycle progression. Cdk family members, including Cdc2 p34, Cdk1-9, PISSLRE, KKIALLRE, PITSLRE and PCTAIRE 1-3 are constitutively expressed throughout the cell cycle. Cdc2 p34 activity peaks during mitosis and Cdk2 activity rises in late G<sub>1</sub> or early S phase. Cdk4 and Cdk6 are critically involved in G<sub>1</sub> to S phase progression. The functions of Cdk3, Cdk5b, PISSLRE, KKIALLRE and PCTAIRE 1-3 are less well defined. Cdk9 (also designated PITALRE) has been shown to specifically phosphorylate the retinoblastoma protein. The more recently cloned *Drosophila* protein, P-TEFb, is thought to be the homolog of mammalian PITALRE. P-TEFb has been shown to be required for HIV Tat transcriptional activation.

## REFERENCES

- Rosenblatt, J., et al. 1992. Human cyclin-dependent kinase 2 is activated during the S and G<sub>2</sub> phases of the cell cycle and associates with cyclin A. *Proc. Natl. Acad. Sci. USA* 89: 2824-2828.
- Okuda, T., et al. 1992. PCTAIRE-1 and PCTAIRE-3, two members of a novel Cdc2/Cdc28-related protein kinase gene family. *Oncogene* 7: 2249-2258.
- Grana, X., et al. 1994. PITALRE, a nuclear Cdc2-related protein kinase that phosphorylates the retinoblastoma protein in vitro. *Proc. Natl. Acad. Sci. USA* 91: 3834-3838.

## CHROMOSOMAL LOCATION

Genetic locus: CDK9 (human) mapping to 9q34.11; Cdk9 (mouse) mapping to 2 B.

## SOURCE

Cdk9 (D-7) is a mouse monoclonal antibody raised against amino acids 204-372 of Cdk9 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-13130 X, 200 µg/0.1 ml.

Cdk9 (D-7) is available conjugated to agarose (sc-13130 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13130 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13130 PE), fluorescein (sc-13130 FITC), Alexa Fluor® 488 (sc-13130 AF488), Alexa Fluor® 546 (sc-13130 AF546), Alexa Fluor® 594 (sc-13130 AF594) or Alexa Fluor® 647 (sc-13130 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13130 AF680) or Alexa Fluor® 790 (sc-13130 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, Cdk9 (D-7) is available conjugated to biotin (sc-13130 B), 200 µg/ml, for WB, IHC(P) and ELISA.

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## RESEARCH USE

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

## APPLICATIONS

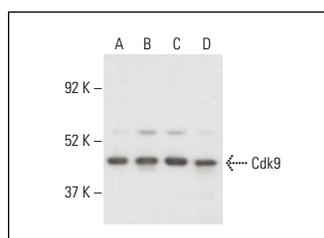
Cdk9 (D-7) is recommended for detection of Cdk9 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:200-1:2,000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 Cdk9 siRNA (h): sc-29268, Cdk9 siRNA (m): sc-35050, Cdk9 shRNA Plasmid (h): sc-29268-SH, Cdk9 shRNA Plasmid (m): sc-35050-SH, Cdk9 shRNA (h) Lentiviral Particles: sc-29268-V and Cdk9 shRNA (m) Lentiviral Particles: sc-35050-V.

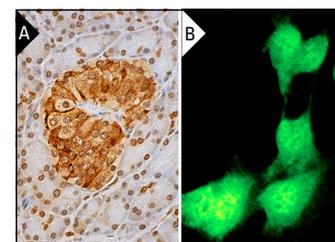
Cdk9 (D-7) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Cdk9: 43 kDa.

## DATA



Cdk9 (D-7): sc-13130. Western blot analysis of Cdk9 expression in HeLa (A), Jurkat (B), K-562 (C) and A-431 (D) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



Cdk9 (D-7) HRP: sc-13130 HRP. Direct immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing nuclear staining of exocrine glandular cells and nuclear and cytoplasmic staining of islets of Langerhans. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214 (A). Cdk9 (D-7): sc-13130. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing nuclear localization (B).

## SELECT PRODUCT CITATIONS

- Michels, A.A., et al. 2003. MAQ1 and 7SK RNA interact with Cdk9/cyclin T complexes in a transcription-dependent manner. *Mol. Cell. Biol.* 23: 4859-4869.
- Ohno, S.I., et al. 2022. Nuclear microRNAs release paused Pol II via the DDX21-CDK9 complex. *Cell Rep.* 39: 110673.
- Shan, X., et al. 2023. Identification of a diketopiperazine-based O-GlcNAc transferase inhibitor sensitizing hepatocellular carcinoma to Cdk9 inhibition. *FEBS J.* 290: 4543-4561.
- Yu, P., et al. 2024. PRMT6-mediated transcriptional activation of ythdf2 promotes glioblastoma migration, invasion, and emt via the wnt-β-catenin pathway. *J. Exp. Clin. Cancer Res.* 43: 116.

## STORAGE

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