

Cdk9 (E-4): sc-376624

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, KKIALRE, PITSLRE and PCTAIRE 1-3 are constitutively expressed throughout the cell cycle. Cdc2 p34 activity peaks during mitosis and Cdk2 activity rises in late G₁ or early S phase. Cdk4 and Cdk6 are critically involved in G₁ to S phase progression. The functions of Cdk3, Cdk5b, PISSLRE, KKIALRE 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 G₂ 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.
- MacLachlan, T.K., et al. 1995. Cyclins, cyclin-dependent kinases and Cdk inhibitors: implications in cell cycle control and cancer. Crit. Rev. Euk. Gene Expr. 5: 127-156.
- Arellano, M., et al. 1997. Regulation of Cdk/cyclin complexes during the cell cycle. Int. J. Biochem. Cell Biol. 29: 559-573.
- Zhu, Y., et al. 1997. Transcription elongation factor P-TEFβ is required for HIV-1 TAT transactivation *in vitro*. Genes Dev. 11: 2622-2632.

CHROMOSOMAL LOCATION

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

SOURCE

Cdk9 (E-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 343-372 at the C-terminus of Cdk9 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-376624 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

Cdk9 (E-4) is recommended for detection of Cdk9 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).

Cdk9 (E-4) is also recommended for detection of Cdk9 in additional species, including equine, canine, bovine and porcine.

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.

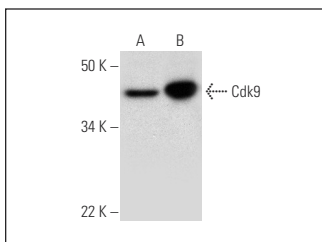
Molecular Weight of Cdk9: 43 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, NIH/3T3 whole cell lysate: sc-2210 or KNRK nuclear extract: sc-2141.

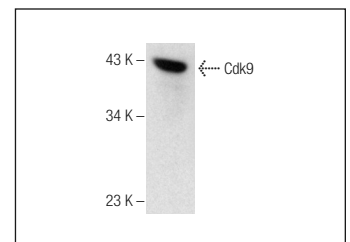
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Cdk9 (E-4): sc-376624. Western blot analysis of Cdk9 expression in NIH/3T3 whole cell lysate (A) and KNRK nuclear extract (B).



Cdk9 (E-4): sc-376624. Western blot analysis of Cdk9 expression in HL-60 whole cell lysate.

STORAGE

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



See **Cdk9 (D-7): sc-13130** for Cdk9 antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.