

Cdk4 (H-22): sc-601

BACKGROUND

Cell cycle progression is controlled in part by a family of cyclin proteins and cyclin dependent kinases (Cdks). Cdk proteins work in concert with the cyclins to phosphorylate key substrates involved in each phase of cell cycle progression. Another family of proteins, Cdk inhibitors, also plays a role in regulating the cell cycle by binding to cyclin-Cdk complexes and modulating their activity. Several Cdk proteins have been identified, including Cdk2-Cdk8, PCTAIRE-1-PCTAIRE-3, PITALRE and PITSLRE. Cdk4, in complex with D-type cyclins, is thought to regulate cell growth during the G₁ phase of the cell cycle. This association with a D-type cyclin up-regulates Cdk4 activity, whereas binding to the Cdk inhibitor p16 down-regulates Cdk4 activity. Activation of the Cdk4-cyclin complexes requires phosphorylation on a single threonyl residue of Cdk4, catalyzed by a Cdk-activating protein (CAK).

CHROMOSOMAL LOCATION

Genetic locus: CDK4 (human) mapping to 12q14.1; Cdk4 (mouse) mapping to 10 D3.

SOURCE

Cdk4 (H-22) is available as either rabbit (sc-601) or goat (sc-601-G) polyclonal affinity purified antibody raised against a peptide mapping at the C-terminus of Cdk4 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-601 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as agarose conjugate for immunoprecipitation, sc-601 AC, 500 µg/0.25 ml agarose in 1 ml; and as HRP conjugate for Western blotting, sc-601 HRP, 200 µg/1 ml.

APPLICATIONS

Cdk4 (H-22) is recommended for detection of Cdk4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), 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).

Cdk4 (H-22) is also recommended for detection of Cdk4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Cdk4 siRNA (h): sc-29261, Cdk4 siRNA (m): sc-29262, Cdk4 shRNA Plasmid (h): sc-29261-SH, Cdk4 shRNA Plasmid (m): sc-29262-SH, Cdk4 shRNA (h) Lentiviral Particles: sc-29261-V and Cdk4 shRNA (m) Lentiviral Particles: sc-29262-V.

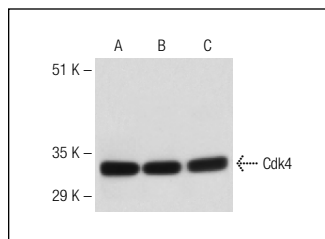
Molecular Weight of Cdk4: 34 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Ramos cell lysate: sc-2216 or K-562 whole cell lysate: sc-2203.

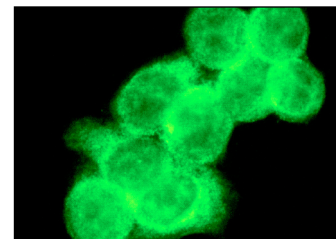
STORAGE

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

DATA



Cdk4 (H-22)-G: sc-601-G. Western blot analysis of Cdk4 expression in HeLa (A), Ramos (B) and K-562 (C) whole cell lysates.



Cdk4 (H-22)-G: sc-601-G. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear staining.

SELECT PRODUCT CITATIONS

- Perkins, N.D., et al. 1997. Regulation of NFκB by cyclin dependent kinases associated with the p300 coactivator. *Science* 275: 523-527.
- Lenasi, T., et al. 2011. Cap-binding protein complex links pre-mRNA capping to transcription elongation and alternative splicing through positive transcription elongation factor β (P-TEFβ). *J. Biol. Chem.* 286: 22758-22768.
- Kalmes, M., et al. 2011. Impact of aryl hydrocarbon receptor (AhR) knock-down on cell cycle progression in human HaCaT keratinocytes. *Biol. Chem.* 392: 643-651.
- Walsh, S.B., et al. 2011. Cyclosporine a mediates pathogenesis of aggressive cutaneous squamous cell carcinoma by augmenting epithelial-mesenchymal transition: role of TGFβ signaling pathway. *Mol. Carcinog.* 50: 516-527.
- Wu, W., et al. 2011. Characterization of the interaction between human respiratory syncytial virus and the cell cycle in continuous cell culture and primary human airway epithelial cells. *J. Virol.* 85: 10300-10309.
- Bianco, M.R., et al. 2011. Cross-talk between cell cycle induction and mitochondrial dysfunction during oxidative stress and nerve growth factor withdrawal in differentiated PC12 cells. *J. Neurosci. Res.* 89: 1302-1315.
- Sanchez, A.M., et al. 2012. AMPK promotes skeletal muscle autophagy through activation of forkhead FoxO3a and interaction with Ulk1. *J. Cell. Biochem.* 113: 695-710.

RESEARCH USE

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



Try **Cdk4 (DCS-35): sc-23896** or **Cdk4 (DCS-31): sc-56277**, our highly recommended monoclonal alternatives to Cdk4 (H-22). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **Cdk4 (DCS-35): sc-23896**.