SANTA CRUZ BIOTECHNOLOGY, INC.

cyclin H (FL-323): sc-855

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Progression through the cell cycle requires activation of a series of enzymes designated cyclin dependent kinases (Cdks). The monomeric catalytic subunit, Cdk2, a critical enzyme for initiation of cell cycle progression, is completely inactive. Partial activation is achieved by the binding of regulatory cyclins such as cyclin D1, while full activation additionally requires phosphorylation at Thr 160. The enzyme responsible for phosphorylation of Thr 160 of Cdk2 and also Thr 161 in Cdc2 p34, designated Cdk-activating kinase (CAK), has been partially purified and shown to be comprised of a catalytic subunit and a regulatory subunit. The catalytic subunit, designated Cdk7, has been identified as the mammalian homolog of MO15, a protein kinase demonstrated earlier in starfish and Xenopus. The regulatory subunit is a novel cyclin (cyclin H) and is required for activation of Cdk7. Like other Cdks, Cdk7 contains a conserved threonine required for full activity; mutation of this residue severely reduces CAK activity.

CHROMOSOMAL LOCATION

Genetic locus: CCNH (human) mapping to 5q14.3; Ccnh (mouse) mapping to 13 C3.

SOURCE

cyclin H (FL-323) is a rabbit polyclonal antibody raised against amino acids 1-323 representing full length cyclin H 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.

cyclin H (FL-323) is available conjugated to agarose (sc-855 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; and to fluorescein (sc-855 FITC), 200 µg/ml, for IF, IHC(P) and FCM.

In addition, cyclin H (FL-323) is available conjugated to TRITC (sc-855 TRITC, 200 µg/ml), for IF, IHC(P) and FCM.

APPLICATIONS

cyclin H (FL-323) is recommended for detection of cyclin H p37 (CAK regulatory subunit) 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with catalytic subunit (Cdk7). cyclin H (FL-323) is also recommended for detection of cyclin H p37 (CAK regulatory subunit) in additional species, including equine, canine and porcine.

Suitable for use as control antibody for cyclin H siRNA (h): sc-29290, cyclin H siRNA (m): sc-29291, cyclin H shRNA Plasmid (h): sc-29290-SH, cyclin H shRNA Plasmid (m): sc-29291-SH, cyclin H shRNA (h) Lentiviral Particles: sc-29290-V and cyclin H shRNA (m) Lentiviral Particles: sc-29291-V.

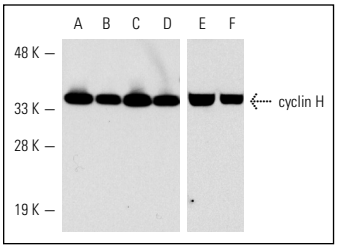
Molecular Weight of cyclin H: 37 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

STORAGE

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

DATA



Western blot analysis of cyclin H expression in Jurkat (**A**), A-431 (**B**), K-562 (**C**), C32 (**D,E**) and NIH/3T3 (**F**) whole cell lysates. Antibodies tested include cyclin H (C-18): sc-609 (**A-D**) and cyclin H (FL-323): sc-855 (**E,F**).

SELECT PRODUCT CITATIONS

1. Fang, F., et al. 1996. Dependence of cyclin E-cdk2 kinase activity on cell anchorage. Science 271: 499-502.
2. Paling, N.R. and Welham, M.J. 2002. Role of the protein tyrosine phosphatase SHP-1 (Src homology phosphatase-1) in the regulation of interleukin-3-induced survival, proliferation and signalling. Biochem. J. 368: 885-894.
3. Rosales, J., et al. 2003. Cdk7 functions as a cdk5 activating kinase in brain. Cell. Physiol. Biochem. 13: 285-296.
4. Korsisaari, N., et al. 2003. The histidine triad protein Hint is not required for murine development or Cdk7 function. Mol. Cell. Biol. 23: 3929-3935.
5. Kozar, K., et al. 2004. Mouse development and cell proliferation in the absence of δ-cyclins. Cell 118: 477-91.
6. Iurisci, I., et al. 2006. Improved tumor control through circadian clock induction by seliciclib, a cyclin-dependent kinase inhibitor. Cancer Res. 66: 10720-10728.
7. Luo, J.L., et al. 2007. Nuclear cytokine-activated IKKα controls prostate cancer metastasis by repressing Maspin. Nature 446: 690-694.
8. Burns, S.S., et al. 2013. Histone deacetylase inhibitor AR-42 differentially affects cell-cycle transit in meningeal and meningioma cells, potently inhibiting NF2-deficient meningioma growth. Cancer Res. 73: 792-803.

RESEARCH USE

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