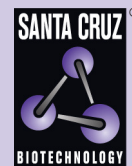


cyclin H (C-18): sc-609



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 (C-18) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of 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.

Blocking peptide available for competition studies, sc-609 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

cyclin H (C-18) 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 (C-18) 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.

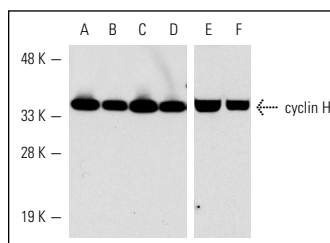
STORAGE

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

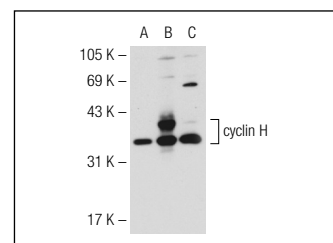
RESEARCH USE

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

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).



cyclin H (C-18): sc-609. Western blot analysis of cyclin H expression in non-transfected 293: sc-110760 (A), human cyclin H transfected: sc-159947 (B) 293 and A-673 (C) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Sewing, A., et al. 1997. High intensity Raf signal causes cell cycle arrest mediated by p21Cip1. *Mol. Cell. Biol.* 17: 5588-5597.
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3. Yu, J., et al. 2007. Gambogic acid-induced G₂/M phase cell-cycle arrest via disturbing Cdk7-mediated phosphorylation of CDC2/p34 in human gastric carcinoma BGC-823 cells. *Carcinogenesis* 28: 632-638.
4. Sotillo, E., et al. 2008. Cyclin E and SV40 small T antigen cooperate to bypass quiescence and contribute to transformation by activating CDK2 in human fibroblasts. *J. Biol. Chem.* 283: 11280-11292.
5. Skirrow, R.C., et al. 2008. Roscovitine inhibits thyroid hormone-induced tail regression of the frog tadpole and reveals a role for cyclin C/Cdk8 in the establishment of the metamorphic gene expression program. *Dev. Dyn.* 237: 3787-3797.
6. Nevis, K.R., et al. 2009. Origin licensing and p53 status regulate Cdk2 activity during G₁. *Cell Cycle* 8: 1952-1963.
7. Patel, S.A. and Simon, M.C. 2010. Functional analysis of the Cdk7.cyclin H.Mat1 complex in mouse embryonic stem cells and embryos. *J. Biol. Chem.* 285: 15587-15598.
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Try **cyclin H (D-10): sc-1662**, our highly recommended monoclonal alternative to cyclin H (C-18).