SANTA CRUZ BIOTECHNOLOGY, INC.

p-Cdk2/3 (Thr 160): sc-12914

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The Power to Question

BACKGROUND

Cell cycle progression is dependent on the sequential activation of cyclin-dependent kinases (Cdks). For full activity, the cell cycle control protein Cdk2 requires phosphorylation of a conserved residue, Threonine 160, carried out by Cdk-activating kinase 1. The kinase associated phosphatase (KAP) is a human dual specificity protein phosphatase that dephosphorylates Cdk2 on Threonine 160 in a cyclin dependent manner. KAP binds to Cdk2 and dephosphorylates Threonine 160 when the associated cyclin subunit is degraded or dissociates. Fluorescence measurements show that Threonine 160 phosphorylation increases the affinity of Cdk2 for both histone substrates and ATP and decreases its affinity for ADP.

REFERENCES

1. Poon, R.Y. and Hunter, T. 1995. Dephosphorylation of Cdk2 Thr 160 by the cyclin-dependent kinase-interacting phosphatase KAP in the absence of cyclin. Science 270: 90-93.
2. Hanlon, N. and Barford, D. 1998. Purification and crystallization of the Cdk-associated protein phosphatase KAP expressed in *Escherichia coli*. Protein Sci. 7: 508-511.

CHROMOSOMAL LOCATION

Genetic locus: CDK2 (human) mapping to 12q13.2, CDK3 (human) mapping to 17q25.1; Cdk2 (mouse) mapping to 10 D3, Cdk3-ps (mouse) mapping to 11 E2.

SOURCE

p-Cdk2/3 (Thr 160) is available as either goat (sc-12914) or rabbit (sc-12914-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Thr 160 phosphorylated Cdk2/3 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-12914 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-Cdk2/3 (Thr 160) is recommended for detection of Thr 160 phosphorylated Cdk2 and correspondingly phosphorylated Cdk3 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).

p-Cdk2/3 (Thr 160) is also recommended for detection of correspondingly phosphorylated Cdk2 and correspondingly correspondingly phosphorylated Cdk3 in additional species, including equine, canine, bovine, porcine and avian.

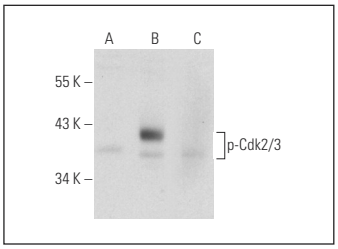
Molecular Weight of Cdk2: 34 kDa.

Positive Controls: HeLa + nocodazole cell lysate: sc-2274.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: for goat primary antibody (sc-12914): use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), for rabbit primary antibody (sc-12914-R): use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent) and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: for goat primary antibody (sc-12914): use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941, for rabbit primary antibody (sc-12914-R): use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Western blot analysis of Cdk2/3 phosphorylation in untreated (**A**), nocodazole treated (**B**) and nocodazole and lamba protein phosphatase treated (**C**) HeLa whole cell lysates. Antibodies tested include p-Cdk2/3 (Thr 160)-R: sc-12914-R (**A**,**B**,**C**).

SELECT PRODUCT CITATIONS

1. Delobel, P., et al. 2006. Cell-cycle markers in a transgenic mouse model of human tauopathy: increased levels of cyclin-dependent kinase inhibitors $p21^{Cip1}$ and $p27^{Kip1}$. Am. J. Pathol. 168: 878-887.
2. Blázquez, C., et al. 2006. Cannabinoid receptors as novel targets for the treatment of melanoma. FASEB J. 20: 2633-2635.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.