# SANTA CRUZ BIOTECHNOLOGY, INC.

# Cdk3 (Y-20): sc-826



# 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 cell cycle by binding to cyclin-Cdk complexes and modulating their activity. Several Cdk proteins have been identified, including Cdk2–Cdk8, PCTAIRE-1–3, PITALRE and PITSLRE. Cdk3, like Cdk2, is known to be required for the  $G_1/S$  transition. Proteins involved in cell cycle control have become the subject of increased interest with regard to their potential roles in tumorigenesis. Both Cdk3 and Cdk2 have been mapped to regions of a human chromosome that may be altered in a variety of tumors.

#### REFERENCES

- 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.
- 2. Pines, J. 1994. The cell cycle kinases. Semin. Cancer Biol. 5: 305-313.
- 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.

# CHROMOSOMAL LOCATION

Genetic locus: CDK3 (human) mapping to 17q25.1; Cdk3 (mouse) mapping to 11 E2.

# SOURCE

Cdk3 (Y-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of Cdk3 of human origin.

#### PRODUCT

Each vial contains 200  $\mu g$  lgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-826 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

#### **RESEARCH USE**

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

#### APPLICATIONS

Cdk3 (Y-20) is recommended for detection of Cdk3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Suitable for use as control antibody for Cdk3 siRNA (h): sc-37578, Cdk3 siRNA (m): sc-37579, Cdk3 shRNA Plasmid (h): sc-37578-SH, Cdk3 shRNA Plasmid (m): sc-37579-SH, Cdk3 shRNA (h) Lentiviral Particles: sc-37578-V and Cdk3 shRNA (m) Lentiviral Particles: sc-37579-V.

### **RECOMMENDED SECONDARY REAGENTS**

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluo-rescence: 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<sup>™</sup> Mounting Medium: sc-24941.

### SELECT PRODUCT CITATIONS

- Braun, K., et al. 1998. Investigation of the cell cycle regulation of Cdk3associated kinase activity and the role of Cdk3 in proliferation and transformation. Oncogene 17: 2259-2269.
- Cheng, L., et al. 2000. Cdk2-dependent phosphorylation and functional inactivation of the pRb-related p130 protein in pRb-, p16<sup>INK 4A+</sup> tumor cells. J. Biol. Chem. 275: 30317-30325.
- Sakurai, M., et al. 2000. Cyclin D1 and Cdk4 protein induction in motor neurons after transient spinal cord ischemia in rabbits. Stroke 31: 200-207.
- 4. Yamochi, T., et al. 2001. Ik3-1/Cables is a substrate for cyclin-dependent kinase 3 (Cdk 3). Eur. J. Biochem. 268: 6076-6082.
- Li, L., et al. 2001. Caveolin-1 mediates testosterone-stimulated survival/ clonal growth and promotes metastatic activities in prostate cancer cells. Cancer Res. 61: 4386-4392.
- Hauck, L., et al. 2002. Inhibition of hypoxia-induced apoptosis by modulation of retinoblastoma protein-dependent signaling in cardiomyocytes. Circ. Res. 91: 782-789.
- 7. Ducruet, A.P., et al. 2003. Regulation of Cdc25A half-life in interphase by cyclin-dependent kinase 2 activity. J. Biol. Chem. 278: 31838.
- 8. Ren, S. 2004. Cyclin C/Cdk3 promotes Rb-dependent  $\rm G_0$  exit. Cell 117: 239-251.
- Nunoda, K., et al. 2007. Identification and functional signature of genes regulated by structurally different Abl kinase inhibitors. Oncogene 26: 4179-4188.
- Tsai, P.C., et al. 2012. Regulation of CD20 in rituximab-resistant cell lines and B-cell non-Hodgkin lymphoma. Clin. Cancer Res. 18: 1039-1050.

#### **STORAGE**

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

# PROTOCOLS

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

Positive Controls: HeLa whole cell lysate: sc-2200.