



cyclin B3 (T-13): sc-131484

BACKGROUND

Cell proliferation is controlled at specific stages of the cell cycle by distinct protein kinase complexes. These complexes consist of a catalytic subunit associating with a specific regulatory subunit to form the active kinase. The cyclins, which include cyclin A, B, C, D, E, F, G, H, I, K, L, T and their related proteins, including Dbf4, comprise the regulatory subunits of these kinase complexes. The controlled activation of the kinase complexes at various intervals of the cell cycle is regulated by the availability of the cyclins to the catalytic subunit. Unlike the catalytic subunit, which is expressed continually, the expression and stability of the regulatory subunit fluctuates depending on the stage of the cell cycle, thereby regulating kinase activity. Cyclin B3, also known as CCNB3 or CYCB3, is a 1,395 amino acid nuclear protein that belongs to the cyclin family of regulatory proteins. Expressed in testis with lower expression in a variety of other tissues, cyclin B3 is thought to be required for early meiotic prophase I, playing an important role in the meiotic cell cycle. Three isoforms of cyclin B3 exist due to alternative splicing events.

REFERENCES

- Gallant, P. and Nigg, E.A. 1994. Identification of a novel vertebrate cyclin: cyclin B3 shares properties with both A- and B-type cyclins. *EMBO J.* 13: 595-605.
- Mikulits, W., Dolznig, H., Edelmann, H., Sauer, T., Deiner, E.M., Ballou, L., Beug, H. and Müllner, E.W. 1997. Dynamics of cell cycle regulators: artifact-free analysis by recultivation of cells synchronized by centrifugal elutriation. *DNA Cell Biol.* 16: 849-859.
- Lozano, J.C., Perret, E., Schatt, P., Arnould, C., Peaucellier, G. and Picard, A. 2002. Molecular cloning, gene localization and structure of human cyclin B3. *Biochem. Biophys. Res. Commun.* 291: 406-413.
- Nguyen, T.B., Manova, K., Capodiec, P., Lindon, C., Bottega, S., Wang, X.Y., Refik-Rogers, J., Pines, J., Wolgemuth, D.J. and Koff, A. 2002. Characterization and expression of mammalian cyclin B3, a prepachytene meiotic cyclin. *J. Biol. Chem.* 277: 41960-41969.
- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 300456. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Kajjura-Kobayashi, H., Kobayashi, T. and Nagahama, Y. 2004. The cloning of cyclin B3 and its gene expression during hormonally induced spermatogenesis in the teleost, *Anguilla japonica*. *Biochem. Biophys. Res. Commun.* 323: 288-292.
- Refik-Rogers, J., Manova, K. and Koff, A. 2006. Misexpression of cyclin B3 leads to aberrant spermatogenesis. *Cell Cycle* 5: 1966-1973.

CHROMOSOMAL LOCATION

Genetic locus: CCNB3 (human) mapping to Xp11.22.

SOURCE

cyclin B3 (T-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of cyclin B3 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-131484 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

cyclin B3 (T-13) is recommended for detection of cyclin B3 isoforms 1, 2 and 3 of 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); non cross-reactive with other cyclin family members.

Suitable for use as control antibody for cyclin B3 siRNA (h): sc-91156, cyclin B3 shRNA Plasmid (h): sc-91156-SH and cyclin B3 shRNA (h) Lentiviral Particles: sc-91156-V.

Molecular Weight of cyclin B3: 120 kDa.

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

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: 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), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: 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.

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.