SANTA CRUZ BIOTECHNOLOGY, INC.

p-B-Myb (Thr 497): sc-20210

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

A member of the Myb proto-oncogene family, B-Myb is a cell cycle-regulated transcription factor that is essential for the transition from G_1 to S phase. This nuclear protein becomes phosphorylated at the onset of S phase by the cyclin A/Cdk2 complex. Ten phosphorylation sites have been identified and all sites were on either Serine or Threonine residues that were followed by a proline residue, suggesting that phosphorylation is due to a proline-directed kinase. Transactivation properties of B-Myb are apparently dependent upon hyperphosphorylation of the protein. Several phosphorylation sites, including Threonine 447, Threonine 490, Threonine 497 and Serine 581, are located near the C-terminus of B-Myb. Phosphorylation of these C-terminal residues plays a critical role in enhancing the transcriptional activity of B-Myb. Poly (ADP-ribose) polymerase (PARP), which has a role in cellular proliferation, binds to B-Myb and thus enhances B-Myb transactivation. PARP is a B-Myb co-factor and promotes phosphorylation of B-Myb by the cyclin/Cdk2 complex.

REFERENCES

1. Johnson, T.K., et al. 1999. Phosphorylation of B-Myb regulates its transactivation potential and DNA binding. J. Biol. Chem. 274: 36741-36749.
2. Bartsch, O., et al. 1999. Identification of cyclin A/Cdk2 phosphorylation sites in B-Myb. Eur. J. Biochem. 260: 384-391.
3. Cervellera, M.N., et al. 2000. Poly(ADP-ribose) polymerase is a B-Myb coactivator. J. Biol. Chem. 275: 10692-10696.
4. Santilli, G., et al. 2001. PARP co-activates B-Myb through enhanced phosphorylation at cyclin/Cdk2 sites. Oncogene 20: 8167-8174.
5. Bessa, M., et al. 2001. Inhibition of cyclin A/Cdk2 phosphorylation impairs B-Myb transactivation function without affecting interactions with DNA or the CBP coactivator. Oncogene 26: 3376-3386.
6. Muller-Tidow, C., et al. 2001. Cyclin A1 directly interacts with B-Myb and cyclin A1/Cdk2 phosphorylate B-Myb at functionally important serine and threonine residues: tissue-specific regulation of B-Myb function. Blood 97: 2091-2097.

CHROMOSOMAL LOCATION

Genetic locus: MYBL2 (human) mapping to 20q13.12; Mybl2 (mouse) mapping to 2 H2.

SOURCE

p-B-Myb (Thr 497) is available as either goat (sc-20210) or rabbit (sc-20210-R) affinity purified polyclonal antibody raised against a short amino acid sequence containing Thr 497 phosphorylated B-Myb 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-20210 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-B-Myb (Thr 497) is recommended for detection of Thr 497 phosphorylated B-Myb 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).

p-B-Myb (Thr 497) is also recommended for detection of correspondingly phosphorylated B-Myb in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for B-Myb siRNA (h): sc-43523, B-Myb siRNA (m): sc-43524, B-Myb shRNA Plasmid (h): sc-43523-SH, B-Myb shRNA Plasmid (m): sc-43524-SH, B-Myb shRNA (h) Lentiviral Particles: sc-43523-V and B-Myb shRNA (m) Lentiviral Particles: sc-43524-V.

Molecular Weight of p-B-Myb: 110 kDa.

Positive Controls: HEK293 whole cell lysate: sc-45136.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: for goat primary antibody (sc-20210): 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-20210-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), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunofluorescence: for goat primary antibody (sc-20210): 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-20210-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.

SELECT PRODUCT CITATIONS

1. Zhan, M., et al. 2012. The B-MYB transcriptional network guides cell cycle progression and fate decisions to sustain self-renewal and the identity of pluripotent stem cells. PLoS ONE 7: e42350.

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.