SANTA CRUZ BIOTECHNOLOGY, INC.

Bmi-1 (K-18): sc-30944

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

In *Drosophila*, Polycomb (Pc-g) gene family encodes chromatin proteins that are required for the repression of homeotic loci in embryonic development. Mel-18 and Bmi-1 are mammalian homologs of *Drosophila* Pc-g group proteins, as they are similarly expressed during development and implicated in the regulation of gene expression, axial skeleton development, and the control of proliferation and survival of haematopoietic cells. Mel-18 directly binds to DNA through a ring-finger motif and preferentially associates with juxtaposed enhancer elements on various genes, including Bcl-2, c-Myc and Hox. Mel-18 is an immediate early response gene within the c-Myc/Cdc25 signaling cascade that exhibits tumor suppressor activity and negatively regulates cell cycle progression by blocking S phase entry. Alternatively, Bmi-1 has been identified as a potent oncogene as it contributes to the transcriptional activation of genes implicated in early lymphoid development. Proviral activation of Bmi-1 expression corresponds to enhanced gene-specific activation of other proto-oncogenes, including c-Myc and Pim, subsequently resulting in the progression of lymphomagenesis.

REFERENCES

1. Tagawa, M., et al. 1990. Expression of novel DNA-binding protein with zinc finger structure in various tumor cells. J. Biol. Chem. 265: 20021-20026.
2. Goebl, M.G. 1991. The Bmi-1 and Mel-18 gene products define a new family of DNA-binding proteins involved in cell proliferation and tumorigenesis. Cell 66: 623.
3. van Lohuizen, M., et al. 1991. Sequence similarity between the mammalian Bmi-1 proto-oncogene and the *Drosophila* regulatory genes Psc and Su(z)2. Nature 353: 353-355.
4. Ishida, A., et al. 1993. Cloning and chromosome mapping of the human Mel-18 gene which encodes a DNA-binding protein with a new "RING-finger" motif. Gene 129: 249-255.
5. Kanno, M., et al. 1995. Mel-18, a Polycomb group-related mammalian gene, encodes a transcriptional negative regulator with tumor suppressive activity. EMBO J. 14: 5672-5678.

CHROMOSOMAL LOCATION

Genetic locus: BMI1 (human) mapping to 10p12.2; Bmi1 (mouse) mapping to 2 A3.

SOURCE

Bmi-1 (S-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Bmi-1 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-30943 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Bmi-1 (S-15) is recommended for detection of Bmi-1 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).

Bmi-1 (S-15) is also recommended for detection of Bmi-1 in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for Bmi-1 siRNA (h): sc-29814, Bmi-1 siRNA (m): sc-29815, Bmi-1 shRNA Plasmid (h): sc-29814-SH, Bmi-1 shRNA Plasmid (m): sc-29815-SH, Bmi-1 shRNA (h) Lentiviral Particles: sc-29814-V and Bmi-1 shRNA (m) Lentiviral Particles: sc-29815-V.

Molecular Weight of Bmi-1: 46 kDa.

Positive Controls: K-562 nuclear extract: sc-2130.

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.

SELECT PRODUCUT CITATIONS

1. Meng, S., et al. 2010. Identification and characterization of Bmi-1 responding element within the p16 promoter. J. Biol. Chem. 285: 33219-33229.

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.