SANTA CRUZ BIOTECHNOLOGY, INC.

YB-1 (59-Q): sc-101198

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Y-Box binding protein YB-1 (also known as CCAAT-binding transcription factor, enhancer factor I subunit A and DNA-binding protein B) belongs to a family of multifunctional proteins, which regulate both transcription and translation. Y-box proteins interact with a wide variety of nucleic acid structures to act as transcription factors and mRNA masking proteins. The modular structure of Y-box proteins includes a highly conserved N-terminal cold-shock domain (CSD, equivalent to the bacterial cold-shock proteins) and four basic C-terminal domains containing arginine clusters and aromatic residues. YB-1 plays a role in cell proliferation as an activator of growth-associated gene expression. YB-1 is also a repressor of the cell death-associated gene FAS. YB-1 may play an important role in controlling cell survival by regulating the expression of cell growth-associated and death-associated genes.

REFERENCES

1. Okamoto, T., et al. 2000. Direct interaction of p53 with the Y-box binding protein, YB-1: a mechanism for regulation of human gene expression. Oncogene 19: 6194-6202.
2. Levenson, V.V., et al. 2000. Pleiotropic resistance to DNA-interactive drugs is associated with increased expression of genes involved in DNA replication, repair, and stress response. Cancer Res. 60: 5027-5030.

CHROMOSOMAL LOCATION

Genetic locus: YBX1 (human) mapping to 1p34.2; Ybx1 (mouse) mapping to 4 D2.1.

SOURCE

YB-1 (59-Q) is a mouse monoclonal antibody raised against recombinant YB-1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

YB-1 (59-Q) is recommended for detection of YB-1 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).

Suitable for use as control antibody for YB-1 siRNA (h): sc-38634, YB-1 siRNA (m): sc-38635, YB-1 shRNA Plasmid (h): sc-38634-SH, YB-1 shRNA Plasmid (m): sc-38635-SH, YB-1 shRNA (h) Lentiviral Particles: sc-38634-V and YB-1 shRNA (m) Lentiviral Particles: sc-38635-V.

Molecular Weight (predicted) of YB-1: 36 kDa.

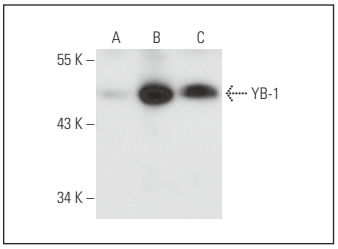
Molecular Weight (observed) of YB-1: 35-50 kDa.

Positive Controls: YB-1 (m): 293T Lysate: sc-126257, YB-1 (h5): 293T Lysate: sc-117138 or K-562 whole cell lysate: sc-2203.

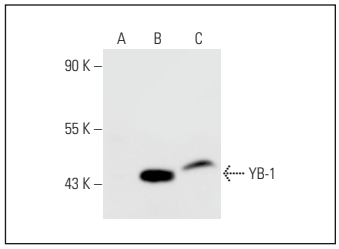
STORAGE

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

DATA



YB-1 (59-Q): sc-101198. Western blot analysis of YB-1 expression in non-transfected 293T: sc-117752 (**A**), human YB-1 transfected 293T: sc-117138 (**B**) and K-562 (**C**) whole cell lysates.



YB-1 (59-Q): sc-101198. Western blot analysis of YB-1 expression in non-transfected 293T: sc-117752 (**A**), mouse YB-1 transfected 293T: sc-126257 (**B**) and K-562 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Sears, D., et al. 2010. Functional phosphoproteomic analysis reveals cold-shock domain protein A to be a Bcr-Abl effector-regulating proliferation and transformation in chronic myeloid leukemia. Cell Death Dis. 1: e93.
2. Zaccara, S., et al. 2014. p53-directed translational control can shape and expand the universe of p53 target genes. Cell Death Differ. 21: 1522-1534.
3. van Zalen, S., et al. 2015. AUF-1 and YB-1 independently regulate β-globin mRNA in developing erythroid cells through interactions with poly(A)-binding protein. Mech. Dev. 136: 40-52.
4. Jain, R., et al. 2015. Discovery of potent and selective RSK inhibitors as biological probes. J. Med. Chem. 58: 6766-6783.
5. Bisio, A., et al. 2015. The 5'-untranslated region of $p16^{INK4a}$ melanoma tumor suppressor acts as a cellular IRES, controlling mRNA translation under hypoxia through YBX1 binding. Oncotarget 6: 39980-39994.
6. Byrd, A.K., et al. 2016. Evidence that G-quadruplex DNA accumulates in the cytoplasm and participates in stress granule assembly in response to oxidative stress. J. Biol. Chem. 291: 18041-18057.
7. Gieseler-Halbach, S., et al. 2016. RSK-mediated nuclear accumulation of the cold-shock Y-box protein-1 controls proliferation of T cells and T-ALL blasts. Cell Death Differ. 24: 371-383.
8. Nübe, J., et al. 2016. Two new isoforms of the human hepatoma-derived growth factor interact with components of the cytoskeleton. Biol. Chem. 397: 417-436.
9. Namkoong, S., et al. 2018. Systematic characterization of stress-induced RNA granulation. Mol. Cell 70: 175-187.e8.

RESEARCH USE

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