

YB1 (D299) Antibody

100 µl
 (10 western blots)



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03/03/10

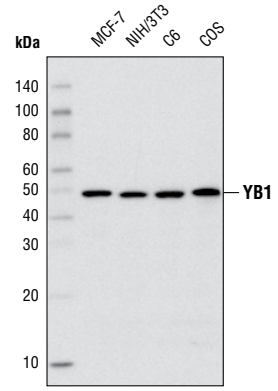
This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IHC-P, IF-IC Endogenous	H, M, R, Mk, (B, X)	49 kDa	Rabbit**

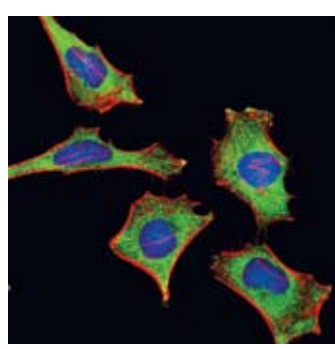
Background: The Y-box binding protein 1 (YB1) belongs to a family of evolutionarily conserved, multifunctional Y-box proteins that bind single-stranded DNA and RNA and function as regulators of transcription, RNA metabolism, and protein synthesis (1). YB1 binds to Y-box sequences (TAACC) found in multiple gene promoters and can positively or negatively regulate transcription. YB1 activates genes associated with proliferation and cancer, such as cyclin A, cyclin B1, matrix metalloproteinase-2 (MMP-2), and the multi-drug resistance 1 (MDR1) gene (2-4). YB1 represses genes associated with cell death, including the Fas cell death-associated receptor and the p53 tumor suppressor gene (5-7). It also interacts with the RNA-splicing factor SRp30c and stabilizes interleukin 2 mRNA upon induction of T lymphocytes by interleukin 2 (8,9). The majority of YB1 protein localizes to the cytoplasm, with a minor pool found in the nucleus; however, nuclear localization appears to be critical for its role in promoting proliferation. Nuclear translocation is cell cycle-regulated, with YB1 protein accumulating in the nucleus during G1/S phase (2). In addition, nuclear translocation is induced in response to extracellular stimuli such as hyperthermia and UV irradiation, or treatment of cells with thrombin, interferons or insulin-like growth factor (IGF-1) (2,10). Treatment of the MCF-7 breast cancer cell line with IGF-1 results in Akt-mediated phosphorylation of YB1 on Ser102, which is required for nuclear translocation of YB1 and its ability to promote anchorage-independent growth (10). YB1 is over-expressed in many malignant tissues, including breast cancer, non-small cell lung carcinoma, ovarian adenocarcinomas, human osteosarcomas, colorectal carcinomas, and malignant melanomas. Nuclear YB1 expression correlates with high levels of proliferation, drug resistance, and poor tumor prognosis (2,7,10).

Specificity/Sensitivity: YB1 (D299) Antibody detects endogenous levels of total YB1 protein.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to the carboxy terminus of the human YB1 protein. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from various cell lines using YB1 (D299) Antibody.



Confocal immunofluorescent analysis of HeLa cells using YB1 (D299) Antibody (green). Actin filaments were labeled using DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

Entrez-Gene ID #4904
Swiss-Prot Acc. #P67809

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunohistochemistry (Paraffin)	1:50
Unmasking buffer:	Citrate
Antibody diluent:	SignalStain® Antibody Diluent #8112
Immunofluorescence (IF-IC)	1:100

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

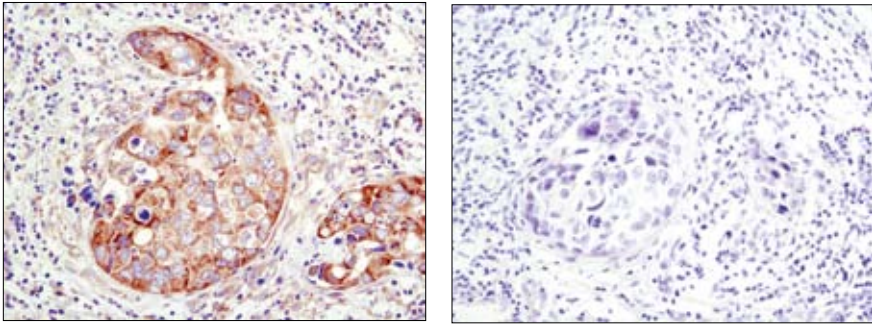
Background References:

- (1) Matsumoto, K. and Wolffe, A.P. (1998) *Trends Cell Biol.* 8, 318-23.
- (2) Jurchott, K. et al. (2003) *J. Biol. Chem.* 278, 27988-96.
- (3) Mertens, P.R. et al. (1997) *J. Biol. Chem.* 272, 22905-12.
- (4) Uchiumi, T. et al. (1993) *Cell Growth Differ.* 4, 147-57.
- (5) Lasham, A. et al. (2000) *Gene* 252, 1-13.
- (6) Lasham, A. et al. (2003) *J. Biol. Chem.* 278, 35516-23.
- (7) Homer, C. et al. (2005) *Oncogene* 24, 8314-25.
- (8) Raffetseder, U. et al. (2003) *J. Biol. Chem.* 278, 18241-8.
- (9) Chen, C.Y. et al. (2000) *Genes Dev.* 14, 1236-48.
- (10) Sutherland, B.W. et al. (2005) *Oncogene* 24, 4281-92.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

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Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide
Species Cross-Reactivity Key: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine
 Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.



Immunohistochemical analysis of paraffin-embedded human breast carcinoma, using YB1 (D299) Antibody in the presence of control peptide (left) or antigen-specific peptide (right).