abcam

ab255606

Anti-YB1 antibody [EPR22682-21]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR22682-21
Purification technique	Affinity purification Protein A
Specificity	Not recommended for mouse IHC.
Concentration	0.475 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/100
Notes	-

Species	Human
Dilution info	1/100
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500

Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/4000
Notes	Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).Not recommended for mouse IHC.

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information YBX1

Function	DNA- and RNA-binding protein involved in various processes, such as translational repression, RNA stabilization, mRNA splicing, DNA repair and transcription regulation (PubMed:10817758, PubMed:11698476, PubMed:14718551, PubMed:18809583, PubMed:31358969, PubMed:8188694). Predominantly acts as a RNA-binding protein: binds preferentially to the 5'-[CU]CUGCG-3' RNA motif and specifically recognizes mRNA transcripts modified by C5-methylcytosine (m5C) (PubMed:19561594, PubMed:31358969). Promotes mRNA stabilization: acts by binding to m5C-containing mRNAs and recruiting the mRNA stability maintainer ELAVL1, thereby preventing mRNA decay (PubMed:10817758, PubMed:11698476, PubMed:31358969). Component of the CRD-mediated complex that promotes MYC mRNA stability (PubMed:19029303). Contributes to the regulation of translation by modulating the interaction between the mRNA and eukaryotic initiation factors (By similarity). Plays a key role in RNA composition of extracellular exosomes by defining the sorting of small non-coding RNAs, such as tRNAs, Y RNAs, Vault RNAs and miRNAs (PubMed:27559612, PubMed:29073095). Probably sorts RNAs in

exosomes by recognizing and binding C5-methylcytosine (m5C)-containing RNAs (PubMed:28341602, PubMed:29073095). Acts as a key effector of epidermal progenitors by preventing epidermal progenitor senescence: acts by regulating the translation of a senescence-associated subset of cytokine mRNAs, possibly by binding to m5C-containing mRNAs (PubMed:29712925). Also involved in pre-mRNA alternative splicing regulation: binds to splice sites in pre-mRNA and regulates splice site selection (PubMed:12604611). Binds to TSC22D1 transcripts, thereby inhibiting their translation and negatively regulating TGF-beta-mediated transcription of COL1A2 (By similarity). Also able to bind DNA: regulates transcription of the multidrug resistance gene MDR1 is enhanced in presence of the APEX1 acetylated form at 'Lys-6' and 'Lys-7' (PubMed:18809583). Binds to promoters that contain a Y-box (5'-CTGATTGGCCAA-3'), such as MDR1 and HLA class II genes (PubMed:18809583, PubMed:8188694). Promotes separation of DNA strands that contain mismatches or are modified by cisplatin (PubMed:14718551). Has endonucleolytic activity and can introduce nicks or breaks into double-stranded DNA, suggesting a role in DNA repair (PubMed:14718551). The secreted form acts as an extracellular mitogen and stimulates cell migration and proliferation (PubMed:19483673).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Y-box Binding Protein 1 (YB1) also known as YBX1 is a multifunctional protein with a mass of approximately 36 kDa. It belongs to the cold shock protein family that contains a highly conserved cold shock domain. YB1 is broadly expressed across many tissues predominantly found in the cytoplasm and nucleus where it functions as a transcription factor and RNA-binding protein. Through its transcriptional regulatory activity YB1 can bind to Y-box sequences in the promoter regions of genes and modulate their expression.
Biological function summary	YB1 plays vital roles in regulating cell proliferation stress response and differentiation. It does not operate alone; it interacts with various complexes notably ribonucleoprotein complexes. YB1 regulates gene expression at both transcriptional and translational levels impacting cell cycle progression and apoptosis pathways. Its ability to bind RNA and DNA makes it integral in controlling the expression of genes related to stress responses and developmental processes.
Pathways	YB1 is essential in many signaling pathways that govern cell growth and survival including the PI3K/AKT pathway and MAPK pathway. In these pathways it interacts with proteins like AKT1 and MAPK3 influencing cellular responses to external and internal stimuli. These interactions reveal the adaptability of YB1 in various cellular contexts allowing it to mediate pathway-specific responses to environmental cues thereby promoting the maintenance of cellular homeostasis and adaptation.
Associated diseases and disorders	The dysregulation of YB1 has been linked to cancer and neurodegenerative diseases. Overexpression or altered localization of YB1 often in connection with other proteins such as p53 contributes to tumorigenesis by enhancing cell proliferation and inhibiting programmed cell death. In neurodegenerative diseases impaired YB1 function can negatively affect neuronal survival potentially mediated through its interactions with proteins like tau which are implicated in conditions such as Alzheimer's disease. Understanding of these associations highlights the potential of YB1 as a therapeutic target in disease management.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

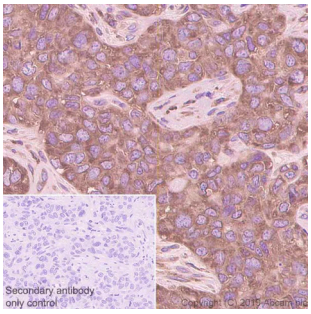
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

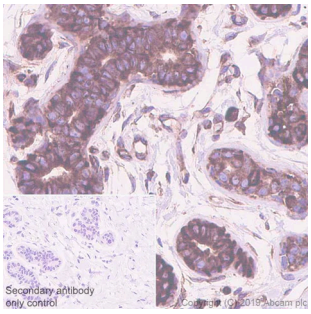
9 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-YB1 antibody [EPR22682-21] (ab255606)

YB1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-YB1 antibody

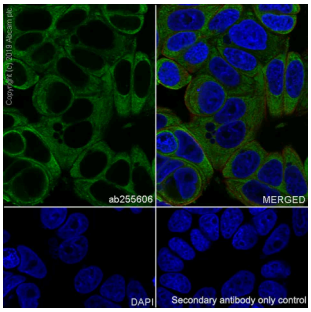
Immunohistochemical analysis of paraffin-embedded Human breast cancer tissue labeling YB1 with ab255606 at 1/4000 dilution followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Cytoplasmic staining in tumor cells of human breast cancer (PMID: 21695211) is observed. Counterstained with Hematoxylin. Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-YB1 antibody [EPR22682-21] (ab255606)

YB1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-YB1 antibody

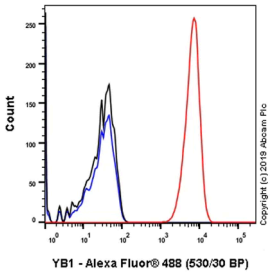
Immunohistochemical analysis of paraffin-embedded Human mammary gland tissue labeling YB1 with ab255606 at 1/4000 dilution followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Cytoplasmic staining in human normal mammary gland (PMID: 21695211) is observed. Counterstained with Hematoxylin. Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).



Immunocytochemistry/ Immunofluorescence - Anti-YB1 antibody [EPR22682-21] (ab255606)

YB1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-YB1 antibody

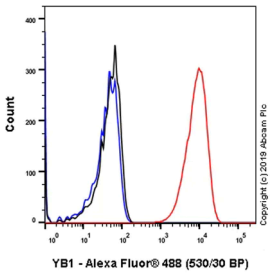
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized MCF7 (human breast adenocarcinoma epithelial cell) cells labelling YB1 with ab255606 at 1/100 dilution, followed by ab150077 AlexaFluor®488 Goat anti-Rabbit secondary antibody at 1/1000 dilution (Green). Confocal image showing cytoplasmic staining in MCF7 cell line is observed. ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab150077 AlexaFluor®488 Goat anti-Rabbit secondary at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-YB1 antibody [EPR22682-21] (ab255606)

YB1 Flow Cytometry (Intracellular) staining using rabbit Anti-YB1 antibody

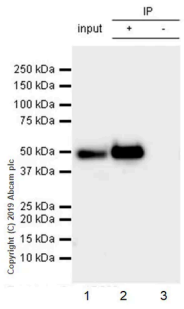
Intracellular flow cytometric analysis of 4% paraformaldehyde fixed 90% methanolpermeabilized MCF7 (Human breast adenocarcinoma epithelial cell) cells labelling YB1 with ab255606 at 1/500 dilution (Red) compared with a Rabbit monoclonal IgG (ab172730, Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.



Flow Cytometry (Intracellular) - Anti-YB1 antibody [EPR22682-21] (ab255606)

YB1 Flow Cytometry (Intracellular) staining using rabbit Anti-YB1 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized A549 (Human lung carcinoma epithelial cell) cells labelling YB1 with ab255606 at 1/500 dilution (Red) compared with a Rabbit monoclonal IgG (ab172730, Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.



Immunoprecipitation - Anti-YB1 antibody [EPR22682-21] (ab255606)

YB1 was immunoprecipitated from 0.35 mg MCF7 (Human breast adenocarcinoma epithelial cell) whole cell lysate 10µg with ab255606 at 1/30 dilution. Western blot was performed on the immunoprecipitate using ab255606 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used as the secondary antibody at 1/5000 dilution.
Lane 1: MCF7 (Human breast adenocarcinoma epithelial cell) whole cell lysate 10µg
Lane 2: ab255606 IP in MCF7 whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab255606 in MCF7 whole cell lysate.

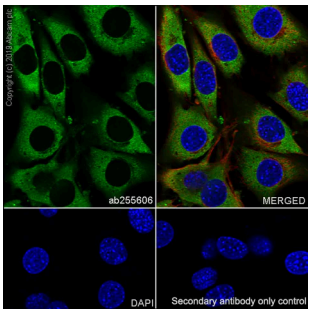
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 30 seconds

All lanes:
Immunoprecipitation - Anti-YB1 antibody [EPR22682-21] (ab255606)

Predicted band size: 36 kDa

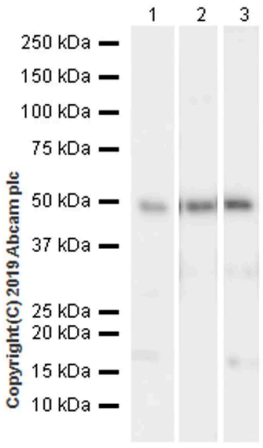
Observed band size: 50 kDa



Immunocytochemistry/ Immunofluorescence - Anti-YB1 antibody [EPR22682-21] (ab255606)

YB1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-YB1 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized NIH/3T3 (mouse embryonic fibroblast) cells labelling YB1 with ab255606 at 1/100 dilution, followed by ab150077 AlexaFluor®488 Goat anti-Rabbit secondary antibody at 1/1000 dilution (Green). Confocal image showing cytoplasmic staining in NIH/3T3 cell line is observed. ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab150077 AlexaFluor®488 Goat anti-Rabbit secondary at 1/1000 dilution.



Western blot - Anti-YB1 antibody [EPR22682-21] (ab255606)

Blocking/diluting buffer and concentration: 5% NFDM/TBST
The molecular weight observed is consistent with what has been described in the literature (PMID:29262622).

Exposure time:

Lane 1: 10 seconds

Lanes 2-3: 37 seconds

All lanes:
Western blot - Anti-YB1 antibody [EPR22682-21] (ab255606) at 1/1000 dilution

Lane 1:
Human tonsil tissue lysate at 20 µg

Lane 2:
MCF7 (human breast adenocarcinoma epithelial cell), whole cell lysate at 20 µg

Lane 3:
SW480 (human colorectal adenocarcinoma epithelial cell), whole cell lysate at 20 µg

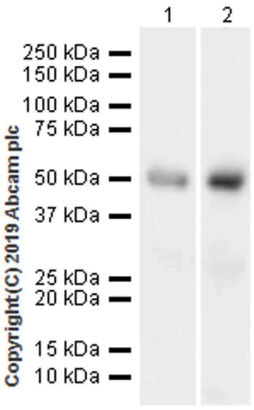
Secondary

Lane 1:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/1000 dilution

Lanes 2 - 3:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 36 kDa

Observed band size: 50 kDa



Western blot - Anti-YB1 antibody [EPR22682-21] (ab255606)

The molecular weight observed is consistent with what has been described in the literature (PMID:29262622).
Blocking/diluting buffer and concentration: 5% NFDM/TBST

Exposure time: 7.75 seconds

All lanes:
Western blot - Anti-YB1 antibody [EPR22682-21] (ab255606) at 1/1000 dilution

Lane 1:
RAW264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage), whole cell lysate at 20 µg

Lane 2:
NIH/3T3 (mouse embryonic fibroblast), whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 36 kDa

Observed band size: 50 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.