

# **YBX1** Blocking Peptide (Center)

Synthetic peptide Catalog # BP19964c

## **Specification**

YBX1 Blocking Peptide (Center) - Product Information

Primary Accession
Other Accession

P67809

P62961, Q28618, P62960, P67808,

NP 004550.2

YBX1 Blocking Peptide (Center) - Additional Information

**Gene ID 4904** 

### Other Names

Nuclease-sensitive element-binding protein 1, CCAAT-binding transcription factor I subunit A, CBF-A, DNA-binding protein B, DBPB, Enhancer factor I subunit A, EFI-A, Y-box transcription factor, Y-box-binding protein 1, YB-1, YBX1, NSEP1, YB1

## **Target/Specificity**

The synthetic peptide sequence is selected from aa 164-178 of HUMAN YBX1

#### **Format**

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

## Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

# **Precautions**

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

YBX1 Blocking Peptide (Center) - Protein Information

Name YBX1 (HGNC:8014)

# YBX1 Blocking Peptide (Center) - Background

Mediates pre-mRNA alternative splicing regulation. Binds to splice sites in pre-mRNA and regulates splice site selection. Binds and stabilizes cytoplasmic mRNA. Contributes to the regulation of translation by modulating the interaction between the mRNA and eukaryotic initiation factors (By similarity). Binds to promoters that contain a Y-box (5'-CTGATTGGCCAA-3'), such as HLA class II genes. Regulates the transcription of numerous genes. Promotes separation of DNA strands that contain mismatches or are modified by cisplatin. Has endonucleolytic activity and can introduce nicks or breaks into double-stranded DNA (in vitro). May play a role in DNA repair. Component of the CRD-mediated complex that promotes MYC mRNA stability.

# YBX1 Blocking Peptide (Center) - References

Yu, Y.N., et al. Int. J. Oncol. 37(2):483-492(2010) Lovett, D.H., et al. Biochem. Biophys. Res. Commun. 398(3):482-488(2010) Takahashi, M., et al. Cancer Sci. 101(6):1367-1373(2010) Cobbold, L.C., et al. Oncogene 29(19):2884-2891(2010) To, K., et al. Cancer Res. 70(7):2840-2851(2010)



### **Function**

DNA- and RNA-binding protein involved in various processes, such as translational repression, RNA stabilization, mRNA splicing, DNA repair and transcription regulation (PubMed:<a href="http://www.u niprot.org/citations/8188694"

target=" blank">8188694</a>,

PubMed: <a href="http://www.uniprot.org/ci tations/10817758"

target=" blank">10817758</a>,

PubMed:<a href="http://www.uniprot.org/ci tations/11698476"

target=" blank">11698476</a>,

PubMed:<a href="http://www.uniprot.org/ci tations/14718551"

target=" blank">14718551</a>,

PubMed:<a href="http://www.uniprot.org/ci tations/18809583"

target="\_blank">18809583</a>,

PubMed:<a href="http://www.uniprot.org/ci tations/31358969"

target=" blank">31358969</a>).

Predominantly acts as a RNA-binding protein: binds preferentially to the

protein: binds preferentially to the

5'-[CU]CUGCG-3' RNA motif and specifically recognizes mRNA transcripts modified by C5-methylcytosine (m5C) (PubMed:<a href = "http://www.uniprot.org/citations/1956159 4" target=" blank">19561594</a>,

PubMed:<a href="http://www.uniprot.org/ci tations/31358969"

target=" blank">31358969</a>).

Promotes mRNA stabilization: acts by binding to m5C- containing mRNAs and recruiting the mRNA stability maintainer ELAVL1, thereby preventing mRNA decay (PubMed:<a href="http://www.uniprot.org/c itations/10817758"}

target="\_blank">10817758</a>,

PubMed: <a href="http://www.uniprot.org/ci tations/11698476"

target=" blank">11698476</a>,

PubMed: <a href="http://www.uniprot.org/ci tations/31358969"

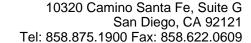
target=" blank">31358969</a>).

Component of the CRD-mediated complex that promotes MYC mRNA stability

(PubMed:<a href="http://www.uniprot.org/c itations/19029303"

target=" blank">19029303</a>).

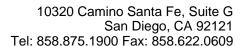
Contributes to the regulation of translation by modulating the interaction between the mRNA and eukaryotic initiation factors (By similarity). Plays a key role in RNA composition of extracellular exosomes by defining the sorting of small non-coding





RNAs, such as tRNAs, Y RNAs, Vault RNAs and miRNAs (PubMed:<a href="http://www. uniprot.org/citations/27559612" target="\_blank">27559612</a>, PubMed:<a href="http://www.uniprot.org/ci tations/29073095" target=" blank">29073095</a>). Probably sorts RNAs in exosomes by recognizing and binding C5-methylcytosine (m5C)-containing RNAs (PubMed:<a href=" http://www.uniprot.org/citations/28341602" target=" blank">28341602</a>, PubMed:<a href="http://www.uniprot.org/ci tations/29073095" target=" blank">29073095</a>). 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:<a href="http://www.uniprot.org/c itations/29712925" target=" blank">29712925</a>). Also involved in pre-mRNA alternative splicing regulation: binds to splice sites in pre-mRNA and regulates splice site selection (PubMed:<a href="http://www.uniprot.org/c itations/12604611" target=" blank">12604611</a>). 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:<a href="http://www.uniprot.org/c itations/18809583" target=" blank">18809583</a>). Binds to promoters that contain a Y-box (5'-CTGATTGGCCAA-3'), such as MDR1 and HLA class II genes (PubMed:<a href="http://ww w.uniprot.org/citations/8188694" target=" blank">8188694</a>, PubMed:<a href="http://www.uniprot.org/ci tations/18809583" target=" blank">18809583</a>). Promotes separation of DNA strands that contain mismatches or are modified by cisplatin (PubMed:<a href="http://www.unip rot.org/citations/14718551" target=" blank">14718551</a>). Has endonucleolytic activity and can introduce nicks or breaks into double- stranded DNA, suggesting a role in DNA repair (PubMed: <a href="http://www.uniprot.org/citations/1471 8551" target=" blank">14718551</a>).

The secreted form acts as an extracellular mitogen and stimulates cell migration and





proliferation (PubMed:<a href="http://www.uniprot.org/citations/19483673" target="\_blank">19483673</a>).

## **Cellular Location**

Cytoplasm. Nucleus. Cytoplasmic granule. Secreted. Secreted, extracellular exosome Note=Predominantly cytoplasmic in proliferating cells (PubMed:12604611). Cytotoxic stress and DNA damage enhance translocation to the nucleus (PubMed:14718551). Localized in cytoplasmic mRNP granules containing untranslated mRNAs (PubMed:25229427). Shuttles between nucleus and cytoplasm (PubMed:25229427). Localized with DDX1, MBNL1 and TIAL1 in stress granules upon stress (PubMed:18335541). Secreted by mesangial and monocytic cells after inflammatory challenges (PubMed:19483673)

# YBX1 Blocking Peptide (Center) - Protocols

Provided below are standard protocols that you may find useful for product applications.

• Blocking Peptides