

Recombinant Rat YBOX1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52412

Size: 10ug, 100ug

Protein Name: Y-box-binding protein 1 (YB-1) (Enhancer factor I subunit A) (EFI-A)
(Nuclease-sensitive element-binding protein 1) (Y-box transcription factor)

Synonym: Ybx1, Yb1

UniProt ID: P62961

UniProt Link: www.uniprot.org/uniprotkb/P62961/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 322 AA

Molecular Weight: 36 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MSSEAETQQPPAAPAAALSAADTKPGSTGSGAGSGGPGGLTSAAPAGGDKKVIATKVLGTVKWFN
VRNGYGFINRNDTKEDVFVHQTAIKKNNPRKYLRVGDGETVEFDVVEGEKGAEANVTGPGGVPV
QGSKYAADRNYRRYPRRRGPPRNYQQNYQNSSEGEKNEGSESAPEGQAQQRRPYRRRRFPPY
YMRPPYARRPQYSNPPVQGEVMEGADNQGAGEQGRPVRQNMRYRGYRPRFRRGPPRQRPRED
GNEEDKENQGDETQGQPPQRRYRRNFNYRRRRPENPKPQDGKETKAADPPAENSSAPEAEQG
GAE

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Y-box-binding protein 1 (YB-1) (Enhancer factor I subunit A) (EFI-A) (Nuclease-sensitive element-binding protein 1) (Y-box transcription factor) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: DNA- and RNA-binding protein involved in various processes, such as translational repression, RNA stabilization, mRNA splicing, DNA repair and transcription regulation. 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). Promotes mRNA stabilization: acts by binding to m5C-containing mRNAs and recruiting the mRNA stability maintainer ELAVL1, thereby preventing mRNA decay. Component of the CRD-mediated complex that promotes MYC mRNA stability (By similarity). 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. Probably sorts RNAs in exosomes by recognizing and binding C5-methylcytosine (m5C)-containing RNAs. 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. Also involved in pre-mRNA alternative splicing regulation: binds to splice sites in pre-mRNA and regulates splice site selection. 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'. Binds to promoters that contain a Y-box (5'-CTGATTGGCCAA-3'), such as MDR1 and HLA class II 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, suggesting a role in DNA repair. The secreted form acts as an extracellular mitogen and stimulates cell migration and proliferation (By similarity).

Subcellular Localization: Cytoplasm . Nucleus . Cytoplasmic granule . Secreted . Secreted, extracellular exosome . Cytoplasm, P-body . Note=Predominantly cytoplasmic in proliferating cells. Cytotoxic stress and DNA damage enhance translocation to the nucleus. Localized in cytoplasmic mRNP granules containing untranslated mRNAs. Shuttles between nucleus and cytoplasm. Localized with DDX1, MBNL1 and TIAL1 in stress granules upon stress. Secreted by mesangial and monocytic cells after inflammatory challenges.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.