

Recombinant Mouse DDX41 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51820

Size: 10ug, 100ug

Protein Name: Probable ATP-dependent RNA helicase DDX41 (EC 3.6.4.13) (DEAD box protein 41)

Synonym: Ddx41

UniProt ID: Q91VN6

UniProt Link: www.uniprot.org/uniprotkb/Q91VN6/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 622 AA

Molecular Weight: 70 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MEDSEPERKRARADEATAGGSRSEDEDEDEDYVPYVPLRQRRQLLLQKLLQRRRKGATEEEQQD
SGSEPRGDEDDIPLGPQSNVSLLDQHQHLKEKAEARKESAKEKQLKEEEKILESVAEGRALMSVKE
MAKGITYDDPIKTSWTPPRYVLSMSEERHERVRKKYHILVEGDGIPPIKSFKEMKFPAAILRGLKKK
GILHPTPIQIQGIPTILSGRDMIGIAFTGSGKTLVFTLPVIMFCLEQEKRLPFSKREGPYGLIICPSRELAR
QTHGILEYYCRLLQEDSSPLLRCALCIGGMSVKEQMETIRHGVHMMVATPGRLMDLLQKKMVSLDIC
RYLALDEADRMIDMGFEGDIRTIFSYFKGQRQTLLFSATMPKKIQNFAKSALVKPVTINVGRAGAASL
DVIQVEVEYVKEEAKMVYLLECLQKTPPPVLIFAEEKADVDIAIHEYLLLLKGVEAVAIHGGKDQEERTKAI
EAFREGKKDVLVATDVASKGLDFPAIQHVINYDMPEEIENYVHRIGRTGRSGNTGIATTFINKACDES
VLMDLKALLLEAKQKVPPVLQVLHCGDESMLDIGGERGCAFCGGLGHRITDCPKLEAMQTKQVSNI
RKDYLAHSSMDF

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 Probable ATP-dependent RNA helicase DDX41 (EC 3.6.4.13) (DEAD box protein 41) 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: Multifunctional protein that participates in many aspects of cellular RNA metabolism. Plays pivotal roles in innate immune sensing and hematopoietic homeostasis (PubMed:35303436). Recognizes foreign or self-nucleic acids generated during microbial infection, thereby initiating anti-pathogen responses. Mechanistically, phosphorylation by BTK allows binding to dsDNA leading to interaction with STING1. Modulates the homeostasis of dsDNA through its ATP-dependent DNA-unwinding activity and ATP-independent strand-annealing activity. In turn, induces STING1-mediated type I interferon and cytokine responses to DNA and DNA viruses (PubMed:21892174). During murine leukemia virus infection, primarily senses the DNA/RNA hybrid generated at the first step of reverse transcription, while cGAS recognizes dsDNA generated at the next step and both are needed for the antiretroviral innate immune response (PubMed:29871919). Selectively modulates the transcription of certain immunity-associated genes by regulating their alternative splicing. Binds to RNA (R)-loops, structures consisting of DNA/RNA hybrids and a displaced strand of DNA that occur during transcription, and prevents their accumulation, thereby maintaining genome stability. Also participates in pre-mRNA splicing, translational regulation and snoRNA processing, which is essential for ribosome biogenesis.

Subcellular Localization: Nucleus . Cytoplasm . Note=Predominantly present in the nucleus and traffics to the cytoplasm, specifically in the perinuclear region, after DNA stimulation.

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.