

## DHX36 Protein, Human, Recombinant (His & Myc)

### General Information

Synonyms:	ATP-dependent DNA/RNA helicase DHX36;DDX36;KIAA1488;MLE-like protein 1;DEAH-box protein 36;RNA helicase associated with AU-rich element protein;DHX36;DEAD/H box polypeptide 36;MLEL1;G4-resolvase-1 (G4R1);RHAU
Protein Construction:	89-179 aa
Species:	Human
Expression Host:	E. coli
Accession:	Q9H2U1
Molecular Weight:	18.2 kDa (predicted)
AA Sequence:	ERREEQIVQLLNSVQAKNDKESEAQISWFAPEDHGYGTEVSTKNTPCSENKLDIQEKKLINQEKKMFIRINRS YIDRDSEYLLQENEPDGT

### QC Testing

Biological Activity:	Activity has not been tested. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 90% as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol. If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose, pH 8.0.

### Preparation and Storage

#### Reconstitution:

Reconstitute the lyophilized protein in sterile deionized water. The product concentration should not be less than 100 μg/mL. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

#### Stability & Storage:

Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

*Actual storage temperature shall be subject to the COA.*

#### Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

Multifunctional ATP-dependent helicase that unwinds G-quadruplex (G4) structures. Plays a role in many biological processes such as genomic integrity, gene expression regulations and as a sensor to initiate antiviral

responses. G4 structures correspond to helical structures containing guanine tetrads. Binds with high affinity to and unwinds G4 structures that are formed in nucleic acids (G4-ADN and G4-RNA). Plays a role in genomic integrity. Converts the G4-RNA structure present in telomerase RNA template component (TREC) into a double-stranded RNA to promote P1 helix formation that acts as a template boundary ensuring accurate reverse transcription. Plays a role in transcriptional regulation. Resolves G4-DNA structures in promoters of genes, such as YY1, KIT/c-kit and ALPL and positively regulates their expression. Plays a role in post-transcriptional regulation. Unwinds a G4-RNA structure located in the 3'-UTR polyadenylation site of the pre-mRNA TP53 and stimulates TP53 pre-mRNA 3'-end processing in response to ultraviolet (UV)-induced DNA damage. Binds to the precursor-microRNA-134 (pre-miR-134) terminal loop and regulates its transport into the synapto-dendritic compartment. Involved in the pre-miR-134-dependent inhibition of target gene expression and the control of dendritic spine size. Plays a role in the regulation of cytoplasmic mRNA translation and mRNA stability. Binds to both G4-RNA structures and alternative non-quadruplex-forming sequence within the 3'-UTR of the PITX1 mRNA regulating negatively PITX1 protein expression. Binds to both G4-RNA structure in the 5'-UTR and AU-rich elements (AREs) localized in the 3'-UTR of NKX2-5 mRNA to either stimulate protein translation or induce mRNA decay in an ELAVL1-dependent manner, respectively. Binds also to ARE sequences present in several mRNAs mediating exosome-mediated 3'-5' mRNA degradation. Involved in cytoplasmic urokinase-type plasminogen activator (uPA) mRNA decay. Component of a multi-helicase-TICAM1 complex that acts as a cytoplasmic sensor of viral double-stranded RNA (dsRNA) and plays a role in the activation of a cascade of antiviral responses including the induction of proinflammatory cytokines via the adapter molecule TICAM1. Required for early embryonic development and hematopoiesis. Involved in the regulation of cardioblast differentiation and proliferation during heart development. Involved in spermatogonia differentiation. May play a role in ossification.

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