

Datasheet for ABIN3092089

## DDX3X Protein (AA 2-662) (His tag)



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### 1 Image

#### Overview

Quantity:	1 mg
Target:	DDX3X
Protein Characteristics:	AA 2-662
Origin:	Human
Source:	Insect Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This DDX3X protein is labelled with His tag.
Application:	ELISA, Western Blotting (WB), Crystallization (Crys), SDS-PAGE (SDS)

#### Product Details

Sequence:	SHVAVENALG LDQQFAGLDL NSSDNQSGGS TASKGRYIPP HLRNREATKG FYDKDSSGWS SSKDKDAYSS FGSRSDSRGK SSFFSDRGSG SRGRFDDRGR SDYDGIGSRG DRSGFGKFER GGNSRWCDKS DEDDWSKPLP PSERLEQELF SGGNTGINFE KYDDIPVEAT GNNCPPHIES FSDVEMGEII MGNIELTRYT RPTPVQKHAI PIIKEKRDLM ACAQTGSGKT AAFLLPILSQ IYSDGPGEAL RAMKENGRYG RRKQYPISLV LAPTRELAQV IYEEARKFSY RSRVRPCVVY GGADIGQQIR DLERGCHLLV ATPGRLVDM ERGKIGLDFC KYLVLEADR MLDMGFEPQI RRIVEQDTMP PKGVRHTMMF SATFPKEIQM LARDFLDEYI FLAVGRVGST SENITQKVVW VEESDKRSFL LDLLNATGKD SLTLVFVETK KGADSLEDFL YHEGYACTSI HGDRSQRDRE EALHQFRSGK SPILVATAVA ARGLDISNVK HVINFDLPD IEEYVHRIGR TGRVGNLGLA TSFFNERNIN ITKDLLDLLV EAKQEVPSWL ENMAYEHYK GSSRGRSKSS RFSGGFGARD YRQSSGASSS SFSSSRASSS RSGGGGHGSS RFGGGGGYGG FYNSDGYGGN YNSQGVDWWG N
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**Sequence without tag. Tag location is at the discretion of the manufacturer. If you have a**

### **special request, please contact us.**

#### Characteristics:

- Made in Germany - from design to production - by highly experienced protein experts.
- Human DDX3X Protein (raised in Insect Cells) purified by multi-step, protein-specific process to ensure crystallization grade.
- State-of-the-art algorithm used for plasmid design (Gene synthesis).

This protein is a made to order protein and will be made for the first time for your order. Our experts in the lab will ensure that you receive a correctly folded protein.

The big advantage of ordering our made-to-order proteins in comparison to ordering custom made proteins from other companies is that there is no financial obligation in case the protein cannot be expressed or purified.

In the unlikely event that the protein cannot be expressed or purified we do not charge anything (other companies might charge you for any performed steps in the expression process for custom-made proteins, e.g. fees might apply for the expression plasmid, the first expression experiments or purification optimization).

When you order this made-to-order protein you will only pay upon receipt of the correctly folded protein. With no financial risk on your end you can rest assured that our experienced protein experts will do everything to make sure that you receive the protein you ordered.

The concentration of our recombinant proteins is measured using the absorbance at 280nm. The protein's absorbance will be measured in several dilutions and is measured against its specific reference buffer.

The concentration of the protein is calculated using its specific absorption coefficient. We use the ExPASy's ProtParam tool to determine the absorption coefficient of each protein.

#### Purification:

Two step purification of proteins expressed in baculovirus infected SF9 insect cells:

1. In a first purification step, the protein is purified from the cleared cell lysate using three different His-tag capture materials: high yield, EDTA resistant, or DTT resistant. Eluate fractions are analyzed by SDS-PAGE.
2. Protein containing fractions of the best purification are subjected to second purification step through size exclusion chromatography. Eluate fractions are analyzed by SDS-PAGE and Western blot.

#### Purity:

>95 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.

#### Sterility:

0.22 µm filtered

#### Endotoxin Level:

Protein is endotoxin free.

#### Grade:

Crystallography grade

## Target Details

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Target: DDX3X

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Alternative Name: DDX3X ([DDX3X Products](#))

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Background: Multifunctional ATP-dependent RNA helicase. The ATPase activity can be stimulated by various ribo- and deoxynucleic acids indicative for a relaxed substrate specificity. In vitro can unwind partially double-stranded DNA with a preference for 5'-single-stranded DNA overhangs. Is involved in several steps of gene expression, such as transcription, mRNA maturation, mRNA export and translation. However, the exact mechanisms are not known and some functions may be specific for a subset of mRNAs. Involved in transcriptional regulation. Can enhance transcription from the CDKN1A/WAF1 promoter in a SP1-dependent manner. Found associated with the E-cadherin promoter and can down-regulate transcription from the promoter. Involved in regulation of translation initiation. Proposed to be involved in positive regulation of translation such as of cyclin E1/CCNE1 mRNA and specifically of mRNAs containing complex secondary structures in their 5'UTRs, these functions seem to require RNA helicase activity. Specifically promotes translation of a subset of viral and cellular mRNAs carrying a 5'proximal stem-loop structure in their 5'UTRs and cooperates with the eIF4F complex. Proposed to act prior to 43S ribosomal scanning and to locally destabilize these RNA structures to allow recognition of the mRNA cap or loading onto the 40S subunit. After association with 40S ribosomal subunits seems to be involved in the functional assembly of 80S ribosomes, the function seems to cover translation of mRNAs with structured and non-structured 5'UTRs and is independent of RNA helicase activity. Also proposed to inhibit cap-dependent translation by competitive interaction with EIF4E which can block the EIF4E:EIF4G complex formation. Proposed to be involved in stress response and stress granule assembly, the function is independent of RNA helicase activity and seems to involve association with EIF4E. May be involved in nuclear export of specific mRNAs but not in bulk mRNA export via interactions with XPO1 and NXF1. Also associates with polyadenylated mRNAs independently of NXF1. Associates with spliced mRNAs in an exon junction complex (EJC)-dependent manner and seems not to be directly involved in splicing. May be involved in nuclear mRNA export by association with DDX5 and regulating its nuclear location. Involved in innate immune signaling promoting the production of type I interferon (IFN-alpha and IFN-beta), proposed to act as viral RNA sensor, signaling intermediate and transcriptional coactivator. Involved in TBK1 and IKKε-dependent IRF3 activation leading to IFNβ induction, plays a role of scaffolding adapter that links IKKε and IRF3 and coordinates their activation. Also found associated with IFNβ promoters, the function is independent of IRF3. Can bind to viral RNAs and via association with MAVS/IPS1 and DDX58/RIG-I is thought to induce signaling in early stages of infection. Involved in regulation of apoptosis. May be required for activation of the intrinsic but inhibit

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## Target Details

activation of the extrinsic apoptotic pathway. Acts as an antiapoptotic protein through association with GSK3A/B and BIRC2 in an apoptosis antagonizing signaling complex, activation of death receptors promotes caspase-dependent cleavage of BIRC2 and DDX3X and relieves the inhibition. May be involved in mitotic chromosome segregation. Appears to be a prime target for viral manipulations. Hepatitis B virus (HBV) polymerase and possibly vaccinia virus (VACV) protein K7 inhibit IFNB induction probably by dissociating DDX3X from TBK1 or IKKBE. Is involved in hepatitis C virus (HCV) replication, the function may involve the association with HCV core protein. HCV core protein inhibits the IPS1-dependent function in viral RNA sensing and may switch the function from a INFB inducing to a HCV replication mode. Involved in HIV-1 replication. Acts as a cofactor for XPO1-mediated nuclear export of incompletely spliced HIV-1 Rev RNAs. {ECO:0000269|PubMed:10329544, ECO:0000269|PubMed:15507209, ECO:0000269|PubMed:16301996, ECO:0000269|PubMed:16818630, ECO:0000269|PubMed:17357160, ECO:0000269|PubMed:17667941, ECO:0000269|PubMed:18264132, ECO:0000269|PubMed:18583960, ECO:0000269|PubMed:18596238, ECO:0000269|PubMed:18628297, ECO:0000269|PubMed:18636090, ECO:0000269|PubMed:18846110, ECO:0000269|PubMed:20127681, ECO:0000269|PubMed:20375222, ECO:0000269|PubMed:20657822, ECO:0000269|PubMed:20837705, ECO:0000269|PubMed:21170385, ECO:0000269|PubMed:21589879, ECO:0000269|PubMed:21730191, ECO:0000269|PubMed:21883093, ECO:0000269|PubMed:22034099, ECO:0000269|PubMed:22323517, ECO:0000269|PubMed:22872150, ECO:0000269|PubMed:23478265}.

Molecular Weight: 74.1 kDa Including tag.

UniProt: [O00571](#)

Pathways: [Ribonucleoprotein Complex Subunit Organization](#), [Positive Regulation of Endopeptidase Activity](#), [Negative Regulation of intrinsic apoptotic Signaling](#), [Ribosome Assembly](#)

## Application Details

Application Notes: In addition to the applications listed above we expect the protein to work for functional studies as well. As the protein has not been tested for functional studies yet we cannot offer a guarantee though.

Comment: In cases in which it is highly likely that the recombinant protein with the default tag will be insoluble our protein lab may suggest a higher molecular weight tag (e.g. GST-tag) instead to

## Application Details

increase solubility. We will discuss all possible options with you in detail to assure that you receive your protein of interest.

Restrictions: For Research Use only

## Handling

Format:	Liquid
Buffer:	100 mM NaCL, 20 mM Hepes, 10% glycerol. pH value is at the discretion of the manufacturer.
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	Unlimited (if stored properly)

## Images



**Image 1.** „Crystallography Grade“ protein due to multi-step, protein-specific purification process