

## Product datasheet for **MG226484**

### **Ddx3x (NM\_010028) Mouse Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	Ddx3x (NM_010028) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Ddx3x
Synonyms:	D1Pas1-rs2; Ddx3; Fin14
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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**ORF Nucleotide Sequence:**

>MG226484 representing NM\_010028  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGAGTCATGTGGCAGTGAAAAATGCGCTCGGGCTGGACCAGCAGTTTGTGGCCTAGACCTGAACCTCTT  
 CAGATAATCAGAGTGGAGGAAGTACAGCAAGCAAAGGGCGTTATATCCCACTCATTAAAGGAACAGAGA  
 AGCTACTAAAGGATTCTATGACAAAGACAGTTCAGGGTGGAGTTCTAGTAAAGATAAGGATGCATACAGC  
 AGTTTTGGATCACGGGTGATTCAAGAGGGAAGTCTAGCTTCTTTGGAGATCGTGGAAAGTGGATCAAGGG  
 GAAGGTTTGTATCGTGGACGGGGAGACTATGATGGCATTGGTGGCCGTGGAGATAGAAGTGGCTTTGG  
 CAAATTTGAAAGAGGTGGAAATAGTCGCTGGTGTGACAAATCAGATGAAGATGACTGGTCAAAGCCACTC  
 CCACCAAGTGAACGATTGGAACAGGAATCTTTCTGGAGGCAACTGGGATTAACCTTTGAGAAATATG  
 ATGACATTCAGTCAAGCAACAGGCAACAACCTGTCTCCACACATTGAAAGTTTCAGTGATGTCGAGAT  
 GGGAGAAATTATATGGGAAACATTGAGCTTACTCGTTACTCGCCCACTCCAGTGCAGAAGCATGCT  
 ATTCCTATTATCAAAGAGAAAAGAGACTTGATGGCTTGTGCTCAAACAGGCTCTGGAAAACTGCAGCAT  
 TTCTCTTGCCCATCTTGAGTCAGATCTATGCTGATGGTCCAGGAGAAGCTCTGAGGGCTATGAAGAAAA  
 TGGAGATATGGCCGTCGTAACAGTATCCAATCTCTTTGGTACTGGCACCAACGAGAGAATTGGCAGTG  
 CAGATCTATGAGGAAGCCAGAAAATTCTCATACCGATCTAGAGTCCGTCCTTGCCTGGTTTATGGTGGT  
 CTGAAATTGGCCAGCAGATTCGAGACTTAGAACGTGGATGCCACTTGTTAGTAGCCACTCCAGGACGTCT  
 AGTGGATATGATGGAGAGAGGGAAGATCGGGTTAGACTTCTGCAAATACCTGGTGTAGATGAAGCTGAC  
 CGGATGTTAGATATGGGGTTTGAACCTCAGATACGAAGAATAGTTGAACAAGACACTATGCCTCCAAAAG  
 GTGTCCGCCACACTATGATGTTTTAGTGTACTTTTCTAAGGAAATACAGATGCTGGCCCGTGAATTTCTT  
 AGATGAGTACATATTTCTGGCTGTAGGAAGAGTTGGGTCTACTTCAGAGAACATCACACAAAAGTGGTT  
 TGGGTGGAGGAGATAGACAAAAGGTCATTTCTGCTTGACCTTCTAAATGCAACAGGCAAGGATCCCTGA  
 CTCTAGTGTGTTGGAGACCAAAAAGGGGGCAGATTCGCTGGAGGATTTCTTATACCATGAAGGATATGC  
 TTGTACCAGTATCCATGGAGACCGTTCTCAGAGAGATAGGGAAGAGGCCCTTCACCAGTTCGCTCAGGA  
 AAAAGCCCAATTCTAGTGGCTACAGCAGTAGCAGCAAGAGGACTGGATATTTCAAATGTGAAGCATGTTA  
 TTAATTTTGACCTGCCTAGTGATATCGAAGAATATGTGCATCGCATAGGCCGTACAGGCCGTGGGGAAA  
 CCTTGGTCTTGCCACCTCATTCTTTAATGAAAGGAATATAAATATCACAAAGGATTTACTGGATCTTCTT  
 GTTGAAGCAAAACAAGAAGTGCCTTCTTGGTTAGAGAACATGGCTTTTGAACACCACTACAAGGGTAGCA  
 GTCGTGGACGTTCTAAGAGCAGTCGATTTAGTGGAGGGTTTGGTGCCAGAGACTACCGACAGAGTAGCGG  
 TGCCAGCAGTTCAGCTTCAAGCAGCAGCGTGAAGCAGCAGTCGAAGTGGTGGAGGTGGCCATGGCGGC  
 AGTCGAGGATTTGGTGGAGGTGGCTACGGAGGCTTTTACAACAGTGATGGATATGGAGGGAATTATAACT  
 CCCAGGGGTTGACTGGTGGGTAAC

**ACGCGT**ACGCGGGCCGCTCGAG – GFP Tag – GTTTAA

**Protein Sequence:** >MG226484 representing NM\_010028  
 Red=Cloning site Green=Tags(s)

MSHVAVENALGLDQQFAGLDLNSSDNQSGGSTASKGRYIPPHLRNREATKGFYDKDSSGWSSSKDKDAYS  
 SFGSRGDSRGKSSFFGDRGSGSRGRFDDRGRGDYDGIIGGRGDRSGFGKFERGGNSRWCDKSDDEDDWSKPL  
 PPSERLEQELFSGGNTGINFEKYDDIPVEATGNPCPHIESFSDVEMGEIIMGNIELTRYTRPTPVQKHA  
 IPIIIEKRDLMACAQTGSCKTAAFLLPILSQIYADGPGALRAMKENGRYGRRKQYPIISLVLAPTRELAV  
 QIYEEARKFSYRSRVRPCVYGGAEIGQQIRDLERGCHLLVATPGRLVDMMERGKIGLDFCKYLVLDEAD  
 RMLDMGFEPQIRRIVEQDTMPPKGVHRHTMMFSATFPKEIQMLARDFLDEYIFLAVGRVGTSENITQKVV  
 WVEEIDKRSFLDLLLNATGKDSLTLVVFVETKKGADSLDFLYHEGYACTSIHGDRSQRDREEALHQFRSG  
 KSPILVATAVAARGLDISNVKHVINFDLPSDIEEYVHRIGRTGRVGNLGLATSFNERNINITKDLLDLL  
 VEAKQEVPSWLENMAFEHHYKGSRSRGSKSSRFSGGFGARDYRQSSGASSSFSSSRASSRSRGGGGHGG  
 SRFGGGGYGGFYNSDGYGGNYNSQGVDDWGN

TRTRPLE - GFP Tag - V

**Restriction Sites:** SgfI-MluI

**Cloning Scheme:**



**ACCN:** NM\_010028

**ORF Size:** 1986 bp

**OTI Disclaimer:** The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

**OTI Annotation:** This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

**Components:** The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

**Reconstitution Method:**

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.

**RefSeq:** [NM\\_010028.3](#), [NP\\_034158.1](#)

**RefSeq Size:** 4571 bp

**RefSeq ORF:** 1989 bp

**Locus ID:** 13205

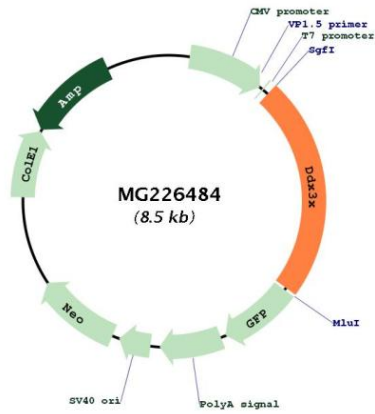
**UniProt ID:** [Q62167](#)

**Cytogenetics:** X 8.17 cM

**Gene Summary:**

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 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. Is an allosteric activator of CSNK1E, it stimulates CSNK1E-mediated phosphorylation of DVL2 and is involved in the positive regulation of canonical Wnt signaling (By similarity).[UniProtKB/Swiss-Prot Function]

Product images:



Circular map for MG226484