

**DHX9 Antibody (clone 3G7)**  
**Mouse Monoclonal Antibody**  
**Catalog # ALS14038****Specification****DHX9 Antibody (clone 3G7) - Product Information**

Application	WB, IF, IHC
Primary Accession	<a href="#">Q08211</a>
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Calculated MW	141kDa KDa

**DHX9 Antibody (clone 3G7) - Additional Information****Gene ID** 1660**Other Names**

ATP-dependent RNA helicase A, RHA, 3.6.4.13, DEAH box protein 9, Leukophysin, LKP, Nuclear DNA helicase II, NDH II, DHX9, DDX9, LKP, NDH2

**Target/Specificity**

Human DHX9

**Reconstitution & Storage**

Short term 4°C, long term aliquot and store at -20°C, avoid freeze thaw cycles.

**Precautions**

DHX9 Antibody (clone 3G7) is for research use only and not for use in diagnostic or therapeutic procedures.

**DHX9 Antibody (clone 3G7) - Protein Information****Name** DHX9 ([HGNC:2750](#))**Function**

Multifunctional ATP-dependent nucleic acid helicase that unwinds DNA and RNA in a 3' to 5' direction and that plays important roles in many processes, such as DNA replication, transcriptional activation, post-transcriptional RNA regulation, mRNA translation and RNA-mediated gene silencing (PubMed: [9111062](http://www.uniprot.org/citations/9111062), PubMed: [11416126](http://www.uniprot.org/citations/11416126), PubMed: [12711669](http://www.uniprot.org/citations/12711669), PubMed: [15355351](http://www.uniprot.org/citations/15355351), PubMed: [16680162](http://www.uniprot.org/citations/16680162), PubMed: [17531811](http://www.uniprot.org/citations/17531811), PubMed: [20669935](http://www.uniprot.org/citations/20669935), PubMed: [21561811](http://www.uniprot.org/citations/21561811), PubMed: [24049074](http://www.uniprot.org/citations/24049074))

[target="\\_blank">24049074</a>](#), PubMed: [target="\\_blank">25062910</a>](http://www.uniprot.org/citations/25062910), PubMed: [target="\\_blank">24990949</a>](http://www.uniprot.org/citations/24990949), PubMed: [target="\\_blank">28221134</a>](http://www.uniprot.org/citations/28221134)). Requires a 3'-single-stranded tail as entry site for acid nuclei unwinding activities as well as the binding and hydrolyzing of any of the four ribo- or deoxyribo-nucleotide triphosphates (NTPs) (PubMed: [target="\\_blank">1537828</a>](http://www.uniprot.org/citations/1537828)). Unwinds numerous nucleic acid substrates such as double-stranded (ds) DNA and RNA, DNA:RNA hybrids, DNA and RNA forks composed of either partially complementary DNA duplexes or DNA:RNA hybrids, respectively, and also DNA and RNA displacement loops (D- and R-loops), triplex-helical DNA (H-DNA) structure and DNA and RNA-based G-quadruplexes (PubMed: [target="\\_blank">20669935</a>](http://www.uniprot.org/citations/20669935), PubMed: [target="\\_blank">21561811</a>](http://www.uniprot.org/citations/21561811), PubMed: [target="\\_blank">24049074</a>](http://www.uniprot.org/citations/24049074)). Binds dsDNA, single-stranded DNA (ssDNA), dsRNA, ssRNA and poly(A)-containing RNA (PubMed: [target="\\_blank">9111062</a>](http://www.uniprot.org/citations/9111062), PubMed: [target="\\_blank">10198287</a>](http://www.uniprot.org/citations/10198287)). Binds also to circular dsDNA or dsRNA of either linear and/or circular forms and stimulates the relaxation of supercoiled DNAs catalyzed by topoisomerase TOP2A (PubMed: [target="\\_blank">12711669</a>](http://www.uniprot.org/citations/12711669)). Plays a role in DNA replication at origins of replication and cell cycle progression (PubMed: [target="\\_blank">24990949</a>](http://www.uniprot.org/citations/24990949)). Plays a role as a transcriptional coactivator acting as a bridging factor between polymerase II holoenzyme and transcription factors or cofactors, such as BRCA1, CREBBP, RELA and SMN1 (PubMed: [target="\\_blank">11149922</a>](http://www.uniprot.org/citations/11149922), PubMed: [target="\\_blank">9323138</a>](http://www.uniprot.org/citations/9323138), PubMed: [target="\\_blank">9662397</a>](http://www.uniprot.org/citations/9662397), PubMed: [target="\\_blank">11038348</a>](http://www.uniprot.org/citations/11038348), PubMed: [target="\\_blank">11416126</a>](http://www.uniprot.org/citations/11416126), PubMed: [target="\\_blank">15355351</a>](http://www.uniprot.org/citations/15355351), PubMed: [target="\\_blank">28221134</a>](http://www.uniprot.org/citations/28221134)). Binds to the CDKN2A promoter (PubMed: [target="\\_blank">11038348</a>](http://www.uniprot.org/citations/11038348)). Plays several roles in post-transcriptional regulation of gene expression (PubMed: [target="\\_blank">28221134</a>](http://www.uniprot.org/citations/28221134), PubMed: [target="\\_blank">28355180</a>](http://www.uniprot.org/citations/28355180)). In cooperation with NUP98, promotes pre-mRNA alternative splicing activities of a subset of genes (PubMed: [target="\\_blank">11402034</a>](http://www.uniprot.org/citations/11402034), PubMed: [target="\\_blank">16680162</a>](http://www.uniprot.org/citations/16680162), PubMed: [target="\\_blank">28221134</a>](http://www.uniprot.org/citations/28221134), PubMed: [target="\\_blank">28355180</a>](http://www.uniprot.org/citations/28355180)). As component of a large PER complex, is involved in the negative regulation of 3' transcriptional termination of circadian target genes such as PER1 and NR1D1 and the control of the circadian rhythms (By similarity). Acts also as a nuclear resolvase that is able to bind and neutralize harmful massive secondary double-stranded RNA structures formed by inverted-repeat Alu retrotransposon elements that are inserted and transcribed as parts of genes during the process of gene transposition (PubMed: [target="\\_blank">28355180</a>](http://www.uniprot.org/citations/28355180)). Involved in the positive regulation of nuclear export of constitutive transport element (CTE)-containing unspliced mRNA (PubMed: [target="\\_blank">9162007</a>](http://www.uniprot.org/citations/9162007), PubMed: [target="\\_blank">10924507</a>](http://www.uniprot.org/citations/10924507), PubMed: [target="\\_blank">11402034</a>](http://www.uniprot.org/citations/11402034)). Component of the coding region determinant (CRD)-mediated complex that promotes cytoplasmic MYC mRNA stability (PubMed: [target="\\_blank">19029303</a>](http://www.uniprot.org/citations/19029303)). Plays a role in mRNA translation (PubMed: [target="\\_blank">28355180</a>](http://www.uniprot.org/citations/28355180)). Positively regulates translation of selected mRNAs through its binding to post-transcriptional control element (PCE) in the 5'-untranslated region (UTR) (PubMed: [target="\\_blank">28355180</a>](#)).

[16680162](http://www.uniprot.org/citations/16680162)). Involved with LARP6 in the translation stimulation of type I collagen mRNAs for CO1A1 and CO1A2 through binding of a specific stem-loop structure in their 5'-UTRs (PubMed:[22190748](http://www.uniprot.org/citations/22190748)). Stimulates LIN28A- dependent mRNA translation probably by facilitating ribonucleoprotein remodeling during the process of translation (PubMed:[21247876](http://www.uniprot.org/citations/21247876)). Plays also a role as a small interfering (siRNA)-loading factor involved in the RNA-induced silencing complex (RISC) loading complex (RLC) assembly, and hence functions in the RISC-mediated gene silencing process (PubMed:[17531811](http://www.uniprot.org/citations/17531811)). Binds preferentially to short double- stranded RNA, such as those produced during rotavirus intestinal infection (PubMed:[28636595](http://www.uniprot.org/citations/28636595)). This interaction may mediate NLRP9 inflammasome activation and trigger inflammatory response, including IL18 release and pyroptosis (PubMed:[28636595](http://www.uniprot.org/citations/28636595)). Finally, mediates the attachment of heterogeneous nuclear ribonucleoproteins (hnRNPs) to actin filaments in the nucleus (PubMed:[11687588](http://www.uniprot.org/citations/11687588)).

### Cellular Location

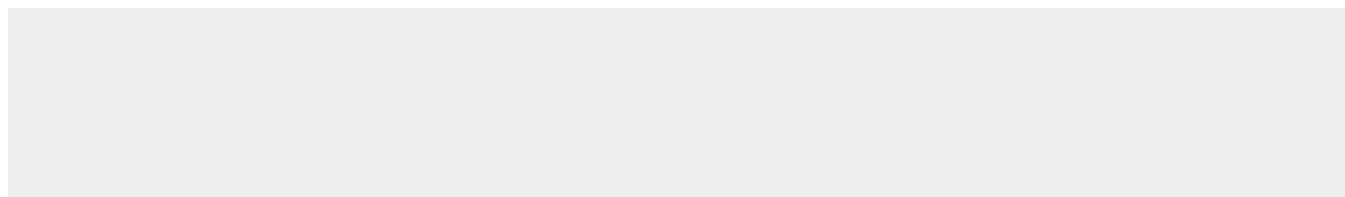
Nucleus. Nucleus, nucleoplasm. Nucleus, nucleolus. Cytoplasm. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Note=Nucleoplasmic shuttling protein (PubMed:10198287, PubMed:16375861, PubMed:10207077, PubMed:9162007) Its nuclear import involves the nucleocytoplasmic transport receptor Importin alpha/Importin beta receptor pathway in a Ran-dependent manner (PubMed:16375861). In interphase, localizes in nuclear stress granules and at perichromatin fibrils and in cytoplasmic ribonucleoprotein granules (PubMed:10198287). Colocalizes with WRN and H2AX at centrosomes in a microtubule-dependent manner following DNA damaging agent treatment (PubMed:17498979). Excluded from the mitotic nucleus as early as prophase and re-entered the nucleus at telophase (PubMed:10198287). Recruited in diffuse and discrete intranuclear foci (GLFG-body) in a NUP98-dependent manner (PubMed:28221134). Colocalizes with SP7 in the nucleus (PubMed:17303075). Colocalizes with ACTB at nuclear actin filaments inside the nucleus or at the nuclear pore (PubMed:11687588). Colocalizes with HNRNPC at nuclear ribonucleoprotein complex proteins in the nucleus (PubMed:11687588). Localized in cytoplasmic mRNP granules containing untranslated mRNAs (PubMed:17289661).

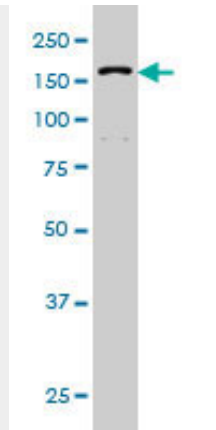
### DHX9 Antibody (clone 3G7) - Protocols

Provided below are standard protocols that you may find useful for product applications.

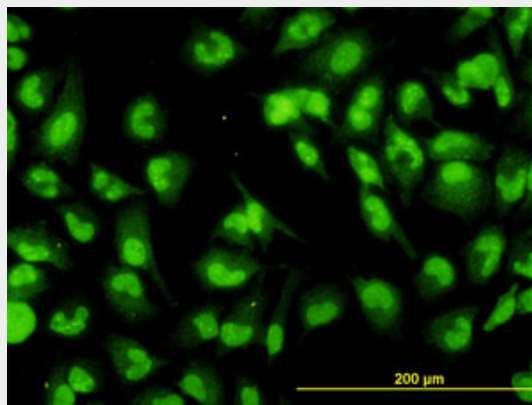
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### DHX9 Antibody (clone 3G7) - Images

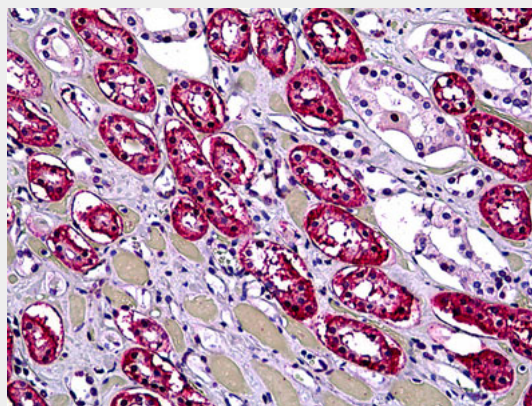




DHX9 monoclonal antibody, clone 3G7 Western blot of DHX9 expression in HeLa nuclear extract.



Immunofluorescence of monoclonal antibody to DHX9 on HeLa cell. [antibody concentration 10 ug/ml]



Anti-DHX9 antibody IHC of human kidney, tubules.

#### **DHX9 Antibody (clone 3G7) - Background**

Unwinds double-stranded DNA and RNA in a 3' to 5' direction. Alteration of secondary structure may subsequently influence interactions with proteins or other nucleic acids. Functions as a transcriptional activator. Component of the CRD- mediated complex that promotes MYC mRNA stability. Involved with LARP6 in the stabilization of type I collagen mRNAs for CO1A1 and CO1A2. As component of a large PER complex is involved in the inhibition of 3' transcriptional termination of circadian target genes such as PER1 and NR1D1 and the control of the circadian rhythms. Positively regulates HIV-1 LTR-directed gene expression.

**DHX9 Antibody (clone 3G7) - References**

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Abdelhaleem M.M.,et al.J. Immunol. 156:2026-2035(1996).  
Zhang S.,et al.J. Biol. Chem. 272:11487-11494(1997).  
Goshima N.,et al.Nat. Methods 5:1011-1017(2008).  
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