

DHX9 Antibody (clone 3G7)

Mouse Monoclonal Antibody Catalog # ALS14038

Specification

DHX9 Antibody (clone 3G7) - Product Information

Application
Primary Accession
Reactivity
Host
Clonality
Calculated MW
Dilution

WB, IHC-P, IF, E
O08211
Human
Mouse
Monoclonal
141kDa KDa
WB~~1:1000
IHC-P~~N/A
IF~~1:50~200
E~~N/A

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:11416126, PubMed:12711669, PubMed:15355351, PubMed:16680162, PubMed:<a href="http://www.uniprot.org/citations/17531811"



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target=" blank">17531811</a>, PubMed:<a href="http://www.uniprot.org/citations/20669935"
target="blank">20669935</a>, PubMed:<a href="http://www.uniprot.org/citations/21561811"
target="blank">21561811</a>, PubMed:<a href="http://www.uniprot.org/citations/24049074"
target="_blank">24049074</a>, PubMed:<a href="http://www.uniprot.org/citations/24990949"
target=" blank">24990949</a>, PubMed:<a href="http://www.uniprot.org/citations/25062910"
target=" blank">25062910</a>, PubMed:<a href="http://www.uniprot.org/citations/28221134"
target=" blank">28221134</a>, PubMed:<a href="http://www.uniprot.org/citations/9111062"
target="blank">9111062</a>, PubMed:<a href="http://www.uniprot.org/citations/37467750"
target="blank">37467750</a>). 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:<a
href="http://www.uniprot.org/citations/1537828" target=" blank">1537828</a>). 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:<a
href="http://www.uniprot.org/citations/20669935" target=" blank">20669935</a>, PubMed:<a
href="http://www.uniprot.org/citations/21561811" target="_blank">21561811</a>, PubMed:<a
href="http://www.uniprot.org/citations/24049074" target="blank">24049074</a>). Binds
dsDNA, single-stranded DNA (ssDNA), dsRNA, ssRNA and poly(A)-containing RNA (PubMed:<a
href="http://www.uniprot.org/citations/10198287" target=" blank">10198287</a>, PubMed:<a
href="http://www.uniprot.org/citations/9111062" target=" blank">9111062</a>). Also binds to
circular dsDNA or dsRNA of either linear and/or circular forms and stimulates the relaxation of
supercoiled DNAs catalyzed by topoisomerase TOP2A (PubMed: <a
href="http://www.uniprot.org/citations/12711669" target=" blank">12711669</a>). Plays a role
in DNA replication at origins of replication and cell cycle progression (PubMed: <a
href="http://www.uniprot.org/citations/24990949" target=" blank">24990949</a>). 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: <a
href="http://www.uniprot.org/citations/11038348" target=" blank">11038348</a>, PubMed:<a
href="http://www.uniprot.org/citations/11149922" target="blank">11149922</a>, PubMed:<a
href="http://www.uniprot.org/citations/11416126" target="_blank">11416126</a>, PubMed:<a
href="http://www.uniprot.org/citations/15355351" target="blank">15355351</a>, PubMed:<a
href="http://www.uniprot.org/citations/28221134" target="blank">28221134</a>, PubMed:<a
href="http://www.uniprot.org/citations/9323138" target=" blank">9323138</a>, PubMed:<a
href="http://www.uniprot.org/citations/9662397" target="blank">9662397</a>). Binds to the
CDKN2A promoter (PubMed: <a href="http://www.uniprot.org/citations/11038348"
target=" blank">11038348</a>). Plays several roles in post-transcriptional regulation of gene
expression (PubMed:<a href="http://www.uniprot.org/citations/28221134"
target=" blank">28221134</a>, PubMed:<a href="http://www.uniprot.org/citations/28355180"
target="blank">28355180</a>). In cooperation with NUP98, promotes pre-mRNA alternative
splicing activities of a subset of genes (PubMed:<a
href="http://www.uniprot.org/citations/11402034" target=" blank">11402034</a>, PubMed:<a
href="http://www.uniprot.org/citations/16680162" target=" blank">16680162</a>, PubMed:<a
href="http://www.uniprot.org/citations/28221134" target="blank">28221134</a>, PubMed:<a
href="http://www.uniprot.org/citations/28355180" target="blank">28355180</a>). 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). Also acts 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:<a href="http://www.uniprot.org/citations/28355180"
target=" blank">28355180</a>). Involved in the positive regulation of nuclear export of
constitutive transport element (CTE)-containing unspliced mRNA (PubMed: <a
href="http://www.uniprot.org/citations/10924507" target=" blank">10924507</a>, PubMed:<a
href="http://www.uniprot.org/citations/11402034" target="blank">11402034</a>, PubMed:<a
href="http://www.uniprot.org/citations/9162007" target="_blank">9162007</a>). Component of
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the coding region determinant (CRD)-mediated complex that promotes cytoplasmic MYC mRNA stability (PubMed:<a href="http://www.uniprot.org/citations/19029303"

target="_blank">19029303). Plays a role in mRNA translation (PubMed:28355180). Positively regulates translation of selected mRNAs through its binding to post-transcriptional control element (PCE) in the 5'-untranslated region (UTR) (PubMed: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). Stimulates LIN28A- dependent mRNA translation probably by facilitating ribonucleoprotein remodeling during the process of translation (PubMed: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). Binds preferentially to short double- stranded RNA, such as those produced during rotavirus intestinal infection (PubMed:<a href="http://www.uniprot.org/citations/28636595"

target="_blank">28636595). This interaction may mediate NLRP9 inflammasome activation and trigger inflammatory response, including IL18 release and pyroptosis (PubMed:28636595). Finally, mediates the attachment of heterogeneous nuclear ribonucleoproteins (hnRNPs) to actin filaments in the nucleus (PubMed:11687588).

Cellular Location

Nucleus. Nucleus, nucleoplasm. Nucleus, nucleolus. Cytoplasm. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Note=Nucleoplasmic shuttling protein (PubMed:10198287, PubMed:10207077, PubMed:16375861, 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).

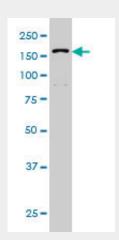
DHX9 Antibody (clone 3G7) - Protocols

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

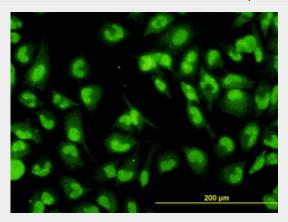
- Western Blot
- Blocking Peptides
- Dot Blot
- <u>Immunohistochemistry</u>
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

DHX9 Antibody (clone 3G7) - Images

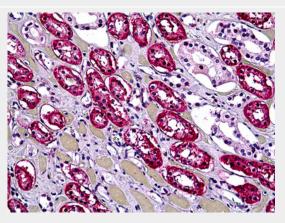




DHX9 monoclonal antibody, clone 3G7 Western blot of DHX9 expression in HeLa nuclear extract.



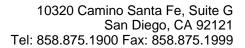
Immunofluorescence of monoclonal antibody to DHX9 on HeLa cell. [antibody concentration 10 ug/ml]



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

Lee C.-G.,et al.J. Biol. Chem. 268:16822-16830(1993). 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). Gregory S.G.,et al.Nature 441:315-321(2006).