

**Goat Anti-DHX9 / RHA Antibody**  
Peptide-affinity purified goat antibody  
Catalog # AF1317a

### Specification

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#### Goat Anti-DHX9 / RHA Antibody - Product Information

Application	WB
Primary Accession	<a href="#">Q08211</a>
Other Accession	<a href="#">NP_001348</a> , <a href="#">1660</a> , <a href="#">13211 (mouse)</a> , <a href="#">304859 (rat)</a>
Reactivity	Human
Predicted	Mouse, Rat
Host	Goat
Clonality	Polyclonal
Concentration	100ug/200ul
Isotype	IgG
Calculated MW	140958

#### Goat Anti-DHX9 / RHA Antibody - 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

#### Format

0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

#### Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

#### Precautions

Goat Anti-DHX9 / RHA Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

#### Goat Anti-DHX9 / RHA Antibody - 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:<a href="http://www.uniprot.org/citations/11416126" target="\_blank">11416126</a>, PubMed:<a href="http://www.uniprot.org/citations/12711669"

target="\_blank">12711669</a>, PubMed:<a href="http://www.uniprot.org/citations/15355351" target="\_blank">15355351</a>, PubMed:<a href="http://www.uniprot.org/citations/16680162" target="\_blank">16680162</a>, PubMed:<a href="http://www.uniprot.org/citations/17531811" 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>). Requires a 3'-single-stranded tail as entry site for acid nucleic 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>). 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:<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). 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:<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

<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 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</a>). Plays a role in mRNA translation (PubMed:<a href="http://www.uniprot.org/citations/28355180" target="\_blank">28355180</a>). Positively regulates translation of selected mRNAs through its binding to post-transcriptional control element (PCE) in the 5'-untranslated region (UTR) (PubMed:<a href="http://www.uniprot.org/citations/16680162" target="\_blank">16680162</a>). 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:<a href="http://www.uniprot.org/citations/22190748" target="\_blank">22190748</a>). Stimulates LIN28A-dependent mRNA translation probably by facilitating ribonucleoprotein remodeling during the process of translation (PubMed:<a href="http://www.uniprot.org/citations/21247876" target="\_blank">21247876</a>). 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:<a href="http://www.uniprot.org/citations/17531811" target="\_blank">17531811</a>). 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</a>). This interaction may mediate NLRP9 inflammasome activation and trigger inflammatory response, including IL18 release and pyroptosis (PubMed:<a href="http://www.uniprot.org/citations/28636595" target="\_blank">28636595</a>). Finally, mediates the attachment of heterogeneous nuclear ribonucleoproteins (hnRNPs) to actin filaments in the nucleus (PubMed:<a href="http://www.uniprot.org/citations/11687588" target="\_blank">11687588</a>).

#### 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).

#### Goat Anti-DHX9 / RHA Antibody - 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](#)

### Goat Anti-DHX9 / RHA Antibody - Images



AF1317a (1  $\mu$ g/ml) staining of nuclear HeLa lysate (35  $\mu$ g protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.

### Goat Anti-DHX9 / RHA Antibody - Background

This gene encodes a member of the DEAH-containing family of RNA helicases. The encoded protein is an enzyme that catalyzes the ATP-dependent unwinding of double-stranded RNA and DNA-RNA complexes. This protein localizes to both the nucleus and the cytoplasm and functions as a transcriptional regulator. This protein may also be involved in the expression and nuclear export of retroviral RNAs. Alternate splicing results in multiple transcript variants. Pseudogenes of this gene are found on chromosomes 11 and 13.

### Goat Anti-DHX9 / RHA Antibody - References

Crystal structure of human RNA helicase A (DHX9): structural basis for unselective nucleotide base binding in a DEAD-box variant protein. Sch $\ddot{u}$ tz P, et al. *J Mol Biol*, 2010 Jul 23. PMID 20510246.  
Kaposi's sarcoma-associated herpesvirus viral protein kinase interacts with RNA helicase a and regulates host gene expression. Jong JE, et al. *J Microbiol*, 2010 Apr. PMID 20437153.  
RNA helicase A acts as a bridging factor linking nuclear beta-actin with RNA polymerase II. Tang W, et al. *Biochem J*, 2009 May 27. PMID 19309309.  
An antiviral response directed by PKR phosphorylation of the RNA helicase A. Sadler AJ, et al. *PLoS Pathog*, 2009 Feb. PMID 19229320.  
Genetic sequence variations of BRCA1-interacting genes AURKA, BAP1, BARD1 and DHX9 in French Canadian families with high risk of breast cancer. Gu $\u00f1$ ard F, et al. *J Hum Genet*, 2009 Mar. PMID 19197335.