

**Mouse Monoclonal Antibody to DDX58**  
**Purified Mouse Monoclonal Antibody**  
**Catalog # AO2403a****Specification**

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**Mouse Monoclonal Antibody to DDX58 - Product Information**

Application	E, WB, FC, ICC
Primary Accession	<a href="#">O95786</a>
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse IgM
Calculated MW	106.6kDa KDa

**Description**

DEAD box proteins, characterized by the conserved motif Asp-Glu-Ala-Asp (DEAD), are putative RNA helicases which are implicated in a number of cellular processes involving RNA binding and alteration of RNA secondary structure. This gene encodes a protein containing RNA helicase-DEAD box protein motifs and a caspase recruitment domain (CARD). It is involved in viral double-stranded (ds) RNA recognition and the regulation of immune response.;

**Immunogen**

Purified recombinant fragment of human DDX58 (AA: 789-925) expressed in E. Coli.

**Formulation**

Purified antibody in PBS with 0.05% sodium azide

**Application Note**

ELISA: 1/10000; WB: 1/500 - 1/2000; ICC: 1/200 - 1/1000; FCM: 1/200 - 1/400

**Mouse Monoclonal Antibody to DDX58 - Additional Information**

**Gene ID** 23586

**Other Names**

RIGI; RIG-I; RLR-1; SGMRT2

**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**

Mouse Monoclonal Antibody to DDX58 is for research use only and not for use in diagnostic or therapeutic procedures.

**Mouse Monoclonal Antibody to DDX58 - Protein Information**

**Name** RIGI ([HGNC:19102](#))

## Synonyms DDX58

### Function

Innate immune receptor that senses cytoplasmic viral nucleic acids and activates a downstream signaling cascade leading to the production of type I interferons and pro-inflammatory cytokines (PubMed:<a href="http://www.uniprot.org/citations/15208624" target="\_blank">15208624</a>, PubMed:<a href="http://www.uniprot.org/citations/15708988" target="\_blank">15708988</a>, PubMed:<a href="http://www.uniprot.org/citations/16125763" target="\_blank">16125763</a>, PubMed:<a href="http://www.uniprot.org/citations/16127453" target="\_blank">16127453</a>, PubMed:<a href="http://www.uniprot.org/citations/16153868" target="\_blank">16153868</a>, PubMed:<a href="http://www.uniprot.org/citations/17190814" target="\_blank">17190814</a>, PubMed:<a href="http://www.uniprot.org/citations/18636086" target="\_blank">18636086</a>, PubMed:<a href="http://www.uniprot.org/citations/19122199" target="\_blank">19122199</a>, PubMed:<a href="http://www.uniprot.org/citations/19211564" target="\_blank">19211564</a>, PubMed:<a href="http://www.uniprot.org/citations/24366338" target="\_blank">24366338</a>, PubMed:<a href="http://www.uniprot.org/citations/28469175" target="\_blank">28469175</a>, PubMed:<a href="http://www.uniprot.org/citations/29117565" target="\_blank">29117565</a>, PubMed:<a href="http://www.uniprot.org/citations/31006531" target="\_blank">31006531</a>, PubMed:<a href="http://www.uniprot.org/citations/34935440" target="\_blank">34935440</a>, PubMed:<a href="http://www.uniprot.org/citations/35263596" target="\_blank">35263596</a>, PubMed:<a href="http://www.uniprot.org/citations/36793726" target="\_blank">36793726</a>). Forms a ribonucleoprotein complex with viral RNAs on which it homooligomerizes to form filaments (PubMed:<a href="http://www.uniprot.org/citations/15208624" target="\_blank">15208624</a>, PubMed:<a href="http://www.uniprot.org/citations/15708988" target="\_blank">15708988</a>). The homooligomerization allows the recruitment of RNF135 an E3 ubiquitin-protein ligase that activates and amplifies the RIG-I- mediated antiviral signaling in an RNA length-dependent manner through ubiquitination-dependent and -independent mechanisms (PubMed:<a href="http://www.uniprot.org/citations/28469175" target="\_blank">28469175</a>, PubMed:<a href="http://www.uniprot.org/citations/31006531" target="\_blank">31006531</a>). Upon activation, associates with mitochondria antiviral signaling protein (MAVS/IPS1) that activates the IKK-related kinases TBK1 and IKKε which in turn phosphorylate the interferon regulatory factors IRF3 and IRF7, activating transcription of antiviral immunological genes including the IFN-α and IFN-β interferons (PubMed:<a href="http://www.uniprot.org/citations/28469175" target="\_blank">28469175</a>, PubMed:<a href="http://www.uniprot.org/citations/31006531" target="\_blank">31006531</a>). Ligands include 5'- triphosphorylated ssRNAs and dsRNAs but also short dsRNAs (<1 kb in length) (PubMed:<a href="http://www.uniprot.org/citations/15208624" target="\_blank">15208624</a>, PubMed:<a href="http://www.uniprot.org/citations/15708988" target="\_blank">15708988</a>, PubMed:<a href="http://www.uniprot.org/citations/19576794" target="\_blank">19576794</a>, PubMed:<a href="http://www.uniprot.org/citations/19609254" target="\_blank">19609254</a>, PubMed:<a href="http://www.uniprot.org/citations/21742966" target="\_blank">21742966</a>). In addition to the 5'-triphosphate moiety, blunt-end base pairing at the 5'-end of the RNA is very essential (PubMed:<a href="http://www.uniprot.org/citations/15208624" target="\_blank">15208624</a>, PubMed:<a href="http://www.uniprot.org/citations/15708988" target="\_blank">15708988</a>, PubMed:<a href="http://www.uniprot.org/citations/19576794" target="\_blank">19576794</a>, PubMed:<a href="http://www.uniprot.org/citations/19609254" target="\_blank">19609254</a>, PubMed:<a href="http://www.uniprot.org/citations/21742966" target="\_blank">21742966</a>). Overhangs at the non- triphosphorylated end of the dsRNA RNA have no major impact on its activity (PubMed:<a href="http://www.uniprot.org/citations/15208624" target="\_blank">15208624</a>, PubMed:<a href="http://www.uniprot.org/citations/15708988" target="\_blank">15708988</a>, PubMed:<a href="http://www.uniprot.org/citations/19576794" target="\_blank">19576794</a>, PubMed:<a href="http://www.uniprot.org/citations/19609254" target="\_blank">19609254</a>, PubMed:<a href="http://www.uniprot.org/citations/21742966" target="\_blank">21742966</a>). A 3'overhang at the 5'triphosphate end decreases and any 5'overhang at the 5' triphosphate end abolishes its activity (PubMed:<a href="http://www.uniprot.org/citations/15208624" target="\_blank">15208624</a>, PubMed:<a href="http://www.uniprot.org/citations/15708988" target="\_blank">15708988</a>

target="\_blank">15708988</a>, PubMed:<a href="http://www.uniprot.org/citations/19576794" target="\_blank">19576794</a>, PubMed:<a href="http://www.uniprot.org/citations/19609254" target="\_blank">19609254</a>, PubMed:<a href="http://www.uniprot.org/citations/21742966" target="\_blank">21742966</a>). Detects both positive and negative strand RNA viruses including members of the families Paramyxoviridae: Human respiratory syncytial virus and measles virus (MeV), Rhabdoviridae: vesicular stomatitis virus (VSV), Orthomyxoviridae: influenza A and B virus, Flaviviridae: Japanese encephalitis virus (JEV), hepatitis C virus (HCV), dengue virus (DENV) and west Nile virus (WNV) (PubMed:<a href="http://www.uniprot.org/citations/21616437" target="\_blank">21616437</a>, PubMed:<a href="http://www.uniprot.org/citations/21884169" target="\_blank">21884169</a>). It also detects rotaviruses and reoviruses (PubMed:<a href="http://www.uniprot.org/citations/21616437" target="\_blank">21616437</a>, PubMed:<a href="http://www.uniprot.org/citations/21884169" target="\_blank">21884169</a>). Detects and binds to SARS-CoV-2 RNAs which is inhibited by m6A RNA modifications (Ref.70). Also involved in antiviral signaling in response to viruses containing a dsDNA genome such as Epstein-Barr virus (EBV) (PubMed:<a href="http://www.uniprot.org/citations/19631370" target="\_blank">19631370</a>). Detects dsRNA produced from non-self dsDNA by RNA polymerase III, such as Epstein-Barr virus-encoded RNAs (EBERs). May play important roles in granulocyte production and differentiation, bacterial phagocytosis and in the regulation of cell migration.

#### Cellular Location

Cytoplasm. Cell projection, ruffle membrane. Cytoplasm, cytoskeleton. Cell junction, tight junction  
Note=Colocalized with TRIM25 at cytoplasmic perinuclear bodies Associated with the actin cytoskeleton at membrane ruffles

#### Tissue Location

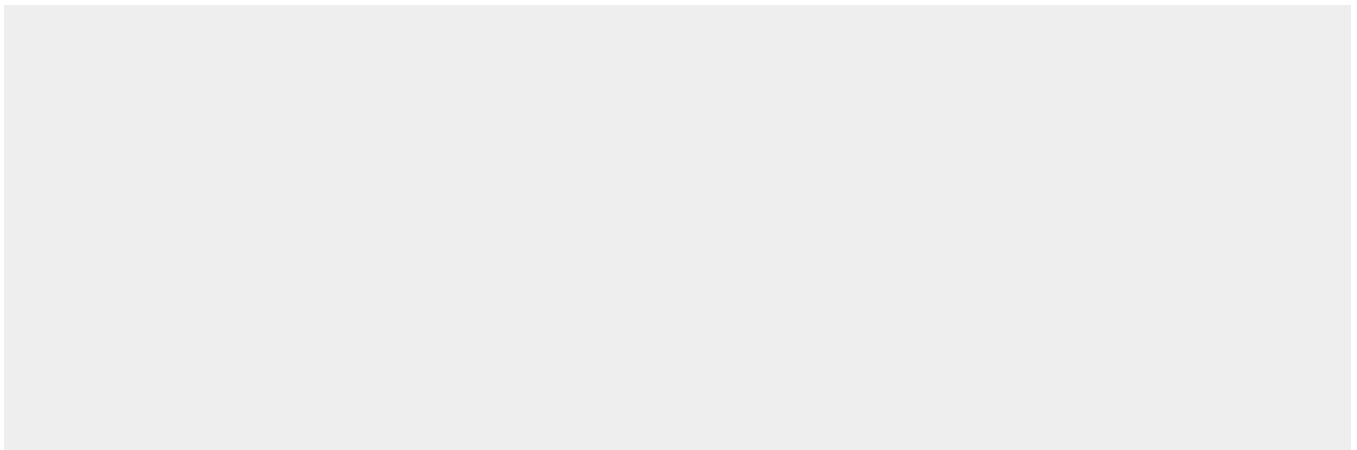
Present in vascular smooth cells (at protein level).

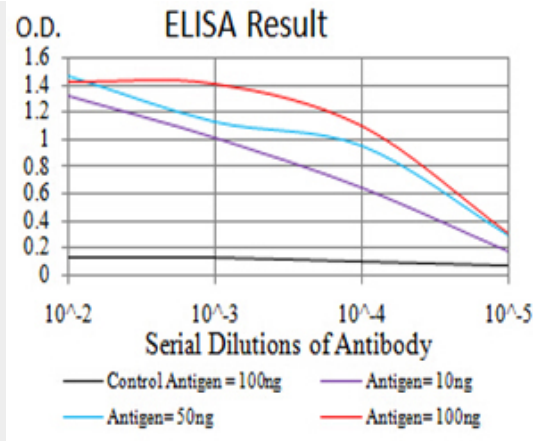
#### Mouse Monoclonal Antibody to DDX58 - Protocols

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

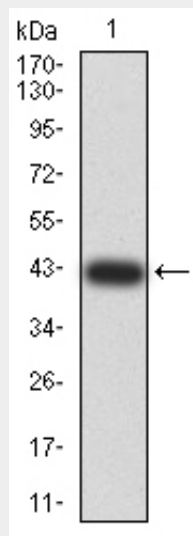
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

#### Mouse Monoclonal Antibody to DDX58 - Images

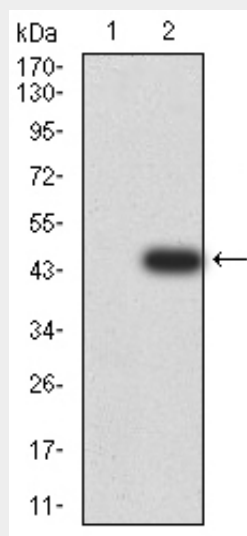




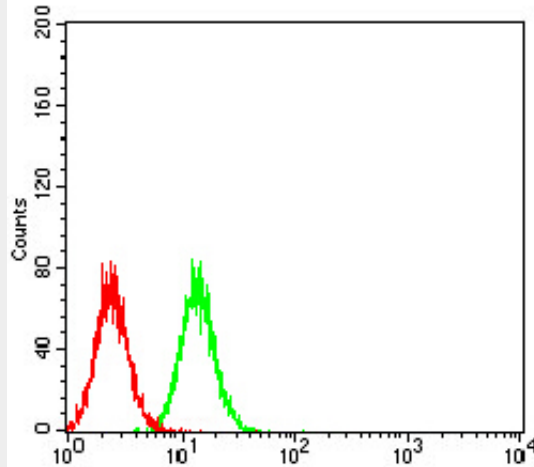
Black line: Control Antigen (100 ng); Purple line: Antigen (10ng); Blue line: Antigen (50 ng); Red line: Antigen (100 ng)



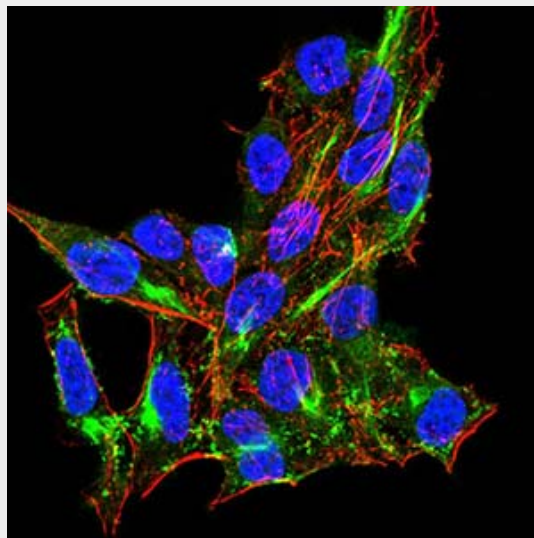
Western blot analysis using DDX58 mAb against HEK293 (1) and DDX58 (AA: 789-925)-hIgGfc transfected HEK293 (2) cell lysate.



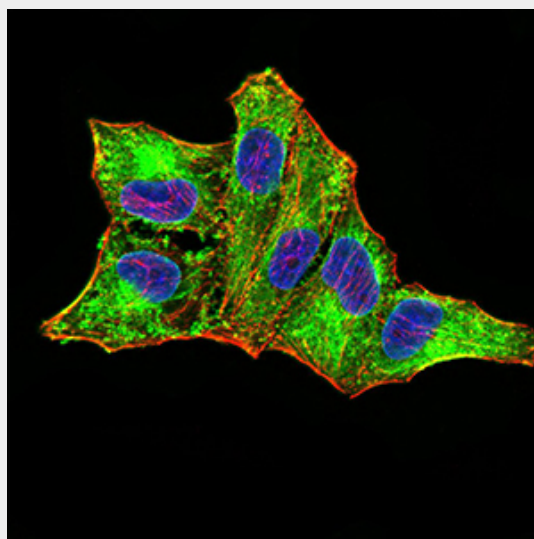
Western blot analysis using DDX58 mAb against HEK293 (1) and DDX58 (AA: 789-925)-hIgGfc transfected HEK293 (2) cell lysate.



Flow cytometric analysis of Hela cells using DDX58 mouse mAb (green) and negative control (red).



Immunofluorescence analysis of Hela cells using DDX58 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor- 555 phalloidin. Secondary antibody from Fisher



Immunofluorescence analysis of MCF-7 cells using DDX58 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor- 555 phalloidin. Secondary antibody from Fisher

#### **Mouse Monoclonal Antibody to DDX58 - References**

1.PLoS One. 2014 Jun 11;9(6):e99610. ; 2.J Pathol. 2014 Jul;233(3):258-68.;