

**DDX58 / RIG-1 / RIG-I Antibody**  
**Goat Polyclonal Antibody**  
**Catalog # ALS12956****Specification**

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**DDX58 / RIG-1 / RIG-I Antibody - Product Information**

Application	IHC
Primary Accession	<a href="#">O95786</a>
Reactivity	Human
Host	Goat
Clonality	Polyclonal
Calculated MW	107kDa KDa

**DDX58 / RIG-1 / RIG-I Antibody - Additional Information****Gene ID** 23586**Other Names**

Probable ATP-dependent RNA helicase DDX58, 3.6.4.13, DEAD box protein 58, RIG-I-like receptor 1, RLR-1, Retinoic acid-inducible gene 1 protein, RIG-1, Retinoic acid-inducible gene I protein, RIG-I, DDX58

**Target/Specificity**

Human DDX58.

**Reconstitution & Storage**

Store at -20°C. Minimize freezing and thawing.

**Precautions**

DDX58 / RIG-1 / RIG-I Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**DDX58 / RIG-1 / RIG-I Antibody - 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: [15208624](http://www.uniprot.org/citations/15208624), PubMed: [15708988](http://www.uniprot.org/citations/15708988), PubMed: [16125763](http://www.uniprot.org/citations/16125763), PubMed: [16127453](http://www.uniprot.org/citations/16127453), PubMed: [16153868](http://www.uniprot.org/citations/16153868), PubMed: [17190814](http://www.uniprot.org/citations/17190814), PubMed: [18636086](http://www.uniprot.org/citations/18636086)),

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>, 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

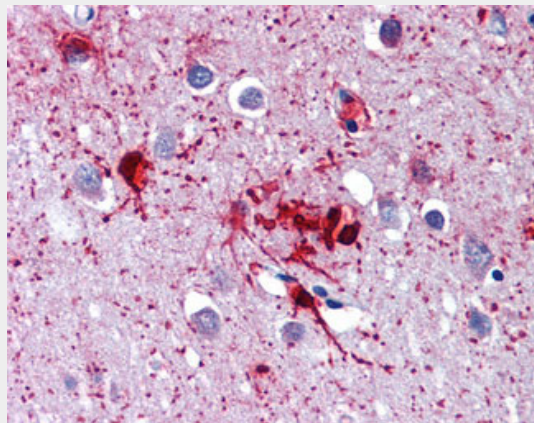
Present in vascular smooth cells (at protein level).

### DDX58 / RIG-1 / RIG-I Antibody - Protocols

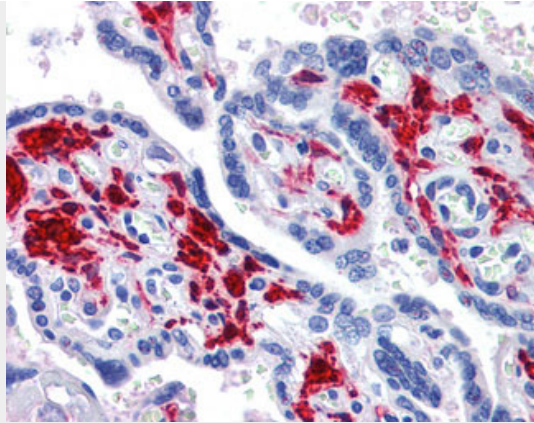
Provided below are standard protocols that you may find useful for product applications.

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

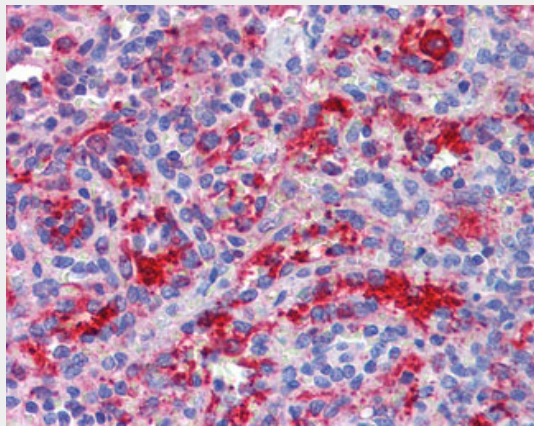
### DDX58 / RIG-1 / RIG-I Antibody - Images



Anti-DDX58 antibody IHC of human brain, cortex.



Anti-DDX58 antibody IHC of human placenta.



Anti-DDX58 antibody IHC of human spleen.

### **DDX58 / RIG-1 / RIG-I Antibody - Background**

Innate immune receptor which acts as a cytoplasmic sensor of viral nucleic acids and plays a major role in sensing viral infection and in the activation of a cascade of antiviral responses including the induction of type I interferons and proinflammatory cytokines. Its ligands include: 5'-triphosphorylated ssRNA and dsRNA and short dsRNA (

### **DDX58 / RIG-1 / RIG-I Antibody - References**

Sun Y.-W.,et al.Thesis (1997), Shanghai Institute of Hematology, China.  
Imaizumi T.,et al.Biochem. Biophys. Res. Commun. 292:274-279(2002).  
Humphray S.J.,et al.Nature 429:369-374(2004).  
Mural R.J.,et al.Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.  
Bechtel S.,et al.BMC Genomics 8:399-399(2007).