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

Specification

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

Application	**IHC**
Primary Accession	O95786
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, PubMed:15708988, PubMed:16125763, PubMed:16127453, PubMed:16153868, PubMed:17190814, PubMed:18636086,

PubMed:19122199, PubMed:19211564, PubMed:24366338, PubMed:28469175, PubMed:29117565, PubMed:31006531, PubMed:34935440, PubMed:35263596, PubMed:36793726). Forms a ribonucleoprotein complex with viral RNAs on which it homooligomerizes to form filaments (PubMed:15208624, PubMed:15708988). 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:28469175, PubMed:31006531). Upon activation, associates with mitochondria antiviral signaling protein (MAVS/IPS1) that activates the IKK-related kinases TBK1 and IKBKE which in turn phosphorylate the interferon regulatory factors IRF3 and IRF7, activating transcription of antiviral immunological genes including the IFN-alpha and IFN-beta interferons (PubMed:28469175, PubMed:31006531). Ligands include 5'- triphosphorylated ssRNAs and dsRNAs but also short dsRNAs (<1 kb in length) (PubMed:15208624, PubMed:15708988, PubMed:19576794, PubMed:19609254, PubMed:21742966). In addition to the 5'-triphosphate moiety, blunt-end base pairing at the 5'-end of the RNA is very essential (PubMed:15208624, PubMed:15708988, PubMed:19576794, PubMed:19609254, PubMed:21742966). Overhangs at the non- triphosphorylated end of the dsRNA RNA have no major impact on its activity (PubMed:15208624, PubMed:15708988, PubMed:19576794, PubMed:19609254, PubMed:21742966). A 3'overhang at the 5'triphosphate end decreases and any 5'overhang at the 5' triphosphate end abolishes its activity (PubMed:15208624, PubMed:15708988, PubMed:19576794, PubMed:19609254, PubMed:21742966). 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:21616437, PubMed:21884169). It also detects rotaviruses and reoviruses (PubMed:21616437, PubMed:21884169). Detects and

binds to SARS-CoV-2 RNAs which is inhibited by m6A RNA modifications (Ref.72). Also involved in antiviral signaling in response to viruses containing a dsDNA genome such as Epstein-Barr virus (EBV) (PubMed:19631370). 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

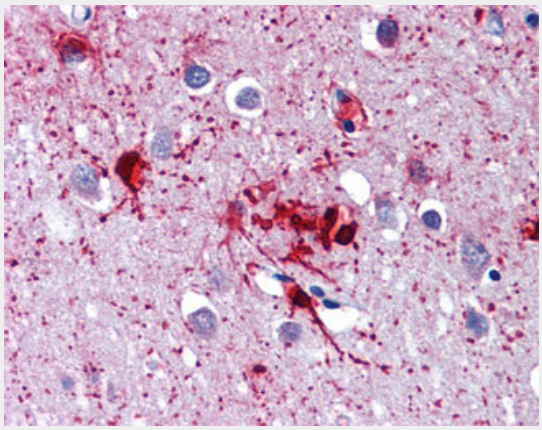
Tissue Location
Present in vascular smooth cells (at protein level).

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 Cytomety
- Cell Culture

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



Anti-DDX58 antibody IHC of human brain, cortex.

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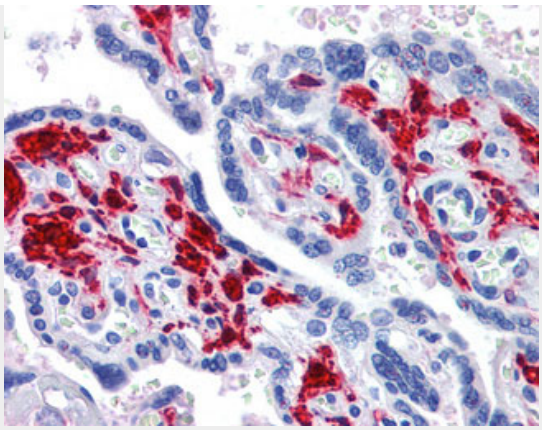
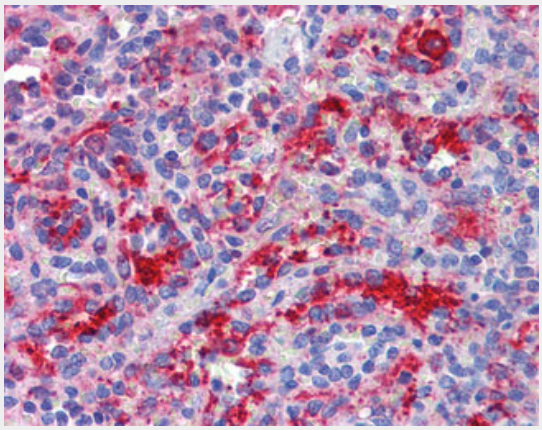


Anti-DDX58 antibody IHC of human placenta.



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

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Humphray S.J.,et al.Nature 429:369-374(2004).
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