

Rabbit DDX58 Polyclonal Antibody | anti-DDX58 antibody

DDX58 Antibody

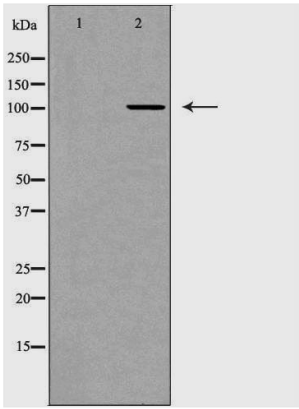
CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA325895	Rabbit	Human, Mouse, Rat	ELISA, Immunohistochemistry, Western Blot

PRODUCT SYNONYMS

DDX58; Polyclonal Antibody; DDX58 Antibody; Ddx58; DDX58_HUMAN; DEAD (Asp Glu Ala Asp) box polypeptide 58; DEAD (Asp Glu Ala Asp/His) box polypeptide; DEAD box protein 58; DEAD/H (Asp Glu Ala Asp/His) box polypeptide RIG1; DKFZp434J1111; DKFZp686N19181; FLJ13599; Probable ATP dependent RNA helicase DDX58; Probable ATP-dependent RNA helicase DDX58; Retinoic acid inducible gene 1 protein; Retinoic acid-inducible gene 1 protein; Retinoic acid-inducible gene 1 protein; RIG I; Rig-1; RIG-I; RIG1; rigi; RLR 1; RNA helicase; RNA helicase RIG I; SGMRT2; anti-DDX58 antibody

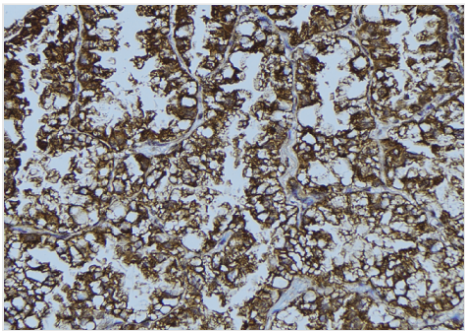
PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Isotype	IgG
Specificity	DDX58 antibody detects endogenous levels of total DDX58
Purity/Purification	The antiserum was purified by peptide affinity chromatography using SulfoLink Coupling Resin.
Form/Format	Liquid Phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Sequence Length	925
Applicable Applications for anti-DDX58 antibody	ELISA, IHC (Immunohistochemistry), WB (Western Blot)
Immunogen	A synthetic peptide of human DDX58
Subcellular Location	Cytoplasm. Colocalized with TRIM25 at cytoplasmic perinuclear bodies.
Tissue Specificity	Present in vascular smooth cells (at protein level).
Predicted Cross Reactivity	Pig, Bovine, Horse, Sheep, Rabbit, Dog
Similarity	Pig (92%), Bovine (92%), Horse (92%), Sheep (100%), Rabbit (100%), Dog (92%)
Conjugation	Unconjugated
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.



WB (Western Blot)

Western blot analysis of Mouse heart lysate, using DDX58 Antibody. The lane on the left is treated with the antigen-specific peptide.



IHC (Immunohistochemistry)

AAA325895 at 1/100 staining Mouse testis tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary.

Related Product Information for anti-DDX58 antibody

Description: Antiviral innate immunity depends on the combination of parallel pathways triggered by virus detecting proteins in the Toll-like receptor (TLR) family and RNA helicases, such as Rig-I (retinoic acid-inducible gene I) and MDA-5 (melanoma differentiation-associated antigen 5), which promote the transcription of type I interferons (IFN) and antiviral enzymes (1-3). TLRs and helicase proteins contain sites that recognize the molecular patterns of different virus types, including DNA, single-stranded RNA (ssRNA), double-stranded RNA (dsRNA), and glycoproteins. These antiviral proteins are found in different cell compartments; TLRs (i.e. TLR3, TLR7, TLR8, and TLR9) are expressed on endosomal membranes and helicases are localized to the cytoplasm. Rig-I expression is induced by retinoic acid, LPS, IFN, and viral infection (4, 5). Both Rig-I and MDA-5 share a DEXD/H-box helicase domain that detects viral dsRNA and two amino-terminal caspase recruitment domains (CARD) that are required for triggering downstream signaling (4-7). Rig-I binds both dsRNA and viral ssRNA that contains a 5'-triphosphate end not seen in host RNA (8, 9). Though structurally related, Rig-I and MDA-5 detect a distinct set of viruses (10, 11). The CARD domain of the helicases, which is sufficient to generate signaling and IFN production, is recruited to the CARD domain of the MAVS/VISA/Cardif/IPS-1 mitochondrial protein, which triggers activation of NF-kappaB, TBK1/IKKepsilon, and IRF-3/IRF-7 (12-15).

Function: 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 (< 1 kb in length). In addition to the 5'-triphosphate moiety, blunt-end base pairing at the 5'-end of the RNA is very essential. Overhangs at the non-triphosphorylated end of the dsRNA RNA have no major impact on its activity. A 3'overhang at the 5'triphosphate end decreases and any 5'overhang at the 5' triphosphate end abolishes its activity. Upon ligand binding it associates with mitochondria antiviral signaling protein (MAVS/IPS1) which activates the IKK-related kinases: TBK1 and IKKepsilon which phosphorylate interferon regulatory factors: IRF3 and IRF7 which in turn activate transcription of antiviral immunological genes, including interferons (IFNs); IFN-alpha and IFN-beta. 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). It also detects rotavirus and reovirus. Also involved in antiviral signaling in response to viruses containing a dsDNA genome such as Epstein-Barr virus (EBV). 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.

Subunit Structure: Monomer; maintained as a monomer in an autoinhibited state. Upon viral dsRNA binding and conformation shift, homomultimerizes and interacts (via tandem CARD domain) with MAVS/IPS1 promoting its filamentation. Interacts with DHX58/LGP2, IKKepsilon, TBK1 and TMEM173/STING. Interacts (via CARD domain) with TRIM25 (via SPRY domain). Interacts with RNF135. Interacts with CYLD. Interacts with NLRC5; blocks the interaction of MAVS/IPS1 to DDX58. Interacts with SRC. Interacts with DDX60. Interacts with isoform 2 of ZC3HAV1 (via zinc-fingers) in an RNA-dependent manner. Interacts (via tandem CARD domain) with SEC14L1; the interaction is direct and impairs the interaction of DDX58 with MAVS/IPS1. Interacts with VCP/p97; interaction is direct and leads to recruit RNF125 and subsequent ubiquitination and degradation (PubMed:26471729). Interacts with NOP53; may regulate DDX58 through USP15-mediated 'Lys-63'-linked deubiquitination (PubMed:27824081). Interacts with LRRC25 (PubMed:29288164).

Post-translational Modifications: Phosphorylated in resting cells and dephosphorylated in RNA virus-infected cells. Phosphorylation at Thr-770, Ser-854 and Ser-855 results in inhibition of its activity while dephosphorylation at these sites results in its activation. ISGylated. Conjugated to ubiquitin-like protein ISG15 upon IFN-beta stimulation. ISGylation negatively regulates its function in antiviral signaling response. Sumoylated, probably by MUL1; inhibiting its polyubiquitination. Ubiquitinated. Undergoes 'Lys-48'- and 'Lys-63'-linked ubiquitination. Lys-172 is the critical site for TRIM25-mediated ubiquitination, for MAVS/IPS1 binding and to induce anti-viral signal transduction (PubMed:17392790). Lys-154, Lys-164 and Lys-172 are critical sites for RNF135-mediated and TRIM4-mediated ubiquitination (PubMed:19017631, PubMed:19484123, PubMed:24755855). Deubiquitinated by CYLD, a protease that selectively cleaves 'Lys-63'-linked ubiquitin chains (PubMed:18636086). Also probably deubiquitinated by USP17L2/USP17 that cleaves 'Lys-48'- and 'Lys-63'-linked ubiquitin chains and positively regulates the receptor (PubMed:20368735). Ubiquitinated at Lys-181 by RNF125, leading to its degradation: ubiquitination takes place upon viral infection and is enhanced 'Lys-63'-linked ubiquitination of the CARD domains, which promote interaction with VCP/p97 and subsequent recruitment of RNF125 (PubMed:17460044, PubMed:26471729). Ubiquitinated at Lys-812 by CBL, leading to its degradation: ubiquitination takes place upon viral infection and involves 'Lys-48'-linked ubiquitination (By similarity).

Similarity: The RLR CTR domain controls homomultimerization and interaction with MAVS/IPS1. In the absence of viral infection, the protein is maintained as a monomer in an autoinhibited state with the CARD domains masked through intramolecular interactions mediated by the RLR CTR domain. Upon binding to viral RNA in the presence of ATP, the RLR CTR domain induces a conformational change exposing the CARD domain and promotes dimerization and CARD interactions with the adapter protein MAVS/IPS1 leading to the induction of downstream signaling. The helicase domain is responsible for dsRNA recognition. The 2 CARD domains are responsible for interaction with and signaling through MAVS/IPS1 and for association with the actin cytoskeleton. The second CARD domain is the primary site for 'Lys-63'-linked ubiquitination. Belongs to the helicase family. RLR subfamily.

NCBI AND UNIPROT INFORMATION

NCBI GI #	27881482
NCBI GeneID	23586
NCBI Accession #	NP_055129.2
NCBI GenBank Nucleotide #	NM_014314.3
UniProt Accession #	O95786; Q5HYE1; Q5VYT1; Q9NT04; A2RU81
Molecular Weight	Observed: 107 kDa Predicted: 107 kDa
NCBI Official Full Name	probable ATP-dependent RNA helicase DDX58
NCBI Official Synonym Full Names	DExD/H-box helicase 58
NCBI Official Symbol	DDX58
NCBI Official Synonym Symbols	RIGI; RIG-I; RLR-1; SGMRT2
NCBI Protein Information	probable ATP-dependent RNA helicase DDX58
UniProt Protein Name	Probable ATP-dependent RNA helicase DDX58
UniProt Gene Name	DDX58
UniProt Synonym Gene Names	RLR-1; RIG-1; RIG-I

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://www.aaabiotech.com/polyclonal/ddx58-antibody-immunohistochemistry-western-blot-elisa/325895>