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DDX41 Antibody

Catalog # ASC11657

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q9UJV9
Other Accession	NP_057306, 21071032
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	69838
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	DDX41 antibody can be used for detection of DDX41 by Western blot at 1 - 2 g/mL.

Additional Information

Gene ID	51428
Other Names	Probable ATP-dependent RNA helicase DDX41, 3.6.4.13, DEAD box protein 41, DEAD box protein abstrakt homolog, DDX41, ABS
Target/Specificity	DDX41; At least two isoforms of DDX41 are known to exist; this antibody will detect both isoforms.
Reconstitution & Storage	DDX41 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	DDX41 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	DDX41
Synonyms	ABS
Function	Multifunctional protein that participates in many aspects of cellular RNA metabolism. Plays pivotal roles in innate immune sensing and hematopoietic homeostasis (PubMed:34473945). Recognizes foreign or self-nucleic acids generated during microbial infection, thereby initiating anti-pathogen responses (PubMed:23222971). Mechanistically, phosphorylation by BTK allows binding to dsDNA leading to interaction with STING1 (PubMed:25704810). Modulates the homeostasis of dsDNA through its ATP-dependent DNA-unwinding activity and ATP-independent strand-annealing activity (PubMed:35613581). In turn, induces STING1-

mediated type I interferon and cytokine responses to DNA and DNA viruses (PubMed:35613581). Selectively modulates the transcription of certain immunity-associated genes by regulating their alternative splicing (PubMed:33650667). Binds to RNA (R)-loops, structures consisting of DNA/RNA hybrids and a displaced strand of DNA that occur during transcription, and prevents their accumulation, thereby maintaining genome stability (PubMed:36229594). Also participates in pre-mRNA splicing, translational regulation and snoRNA processing, which is essential for ribosome biogenesis (PubMed:36229594, PubMed:36780110).

Cellular Location

Nucleus. Cytoplasm Note=Predominantly present in the nucleus and traffics to the cytoplasm, specifically in the perinuclear region, after DNA stimulation.

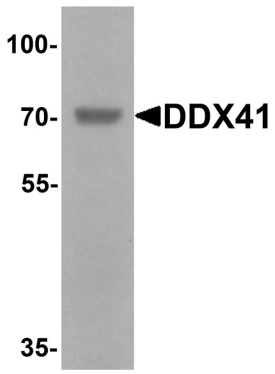
Background

DDX41 Antibody: DEAD box proteins, characterized by the conserved motif Asp-Glu-Ala-Asp, are putative RNA helicases implicated in several cellular processes involving modifications of RNA secondary structure such as translation initiation, nuclear and mitochondrial splicing, and ribosome and spliceosome assembly. DDX41, also known as Abstrakt, interacts with and regulates the expression of sorting nexin-2 (SNX2), a protein involved in protein sorting in the trans-Golgi network. Recent evidence suggests that DDX41 also plays a role in the innate immune response by sensing intracellular viral DNA, triggering TBK1 and IRF3 activation, leading to a type I interferon immune response.

References

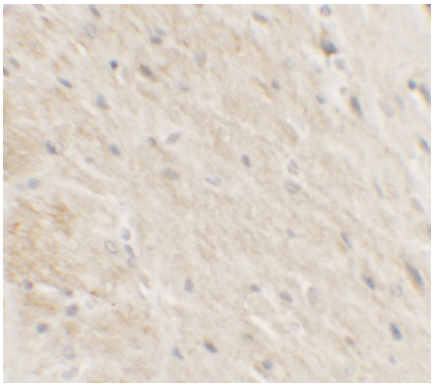
Cordin O, Banroques J, Tanner NK, et al. The DEAD-box protein family of RNA helicases. Gene 2006; 367:17-37.
Linder P. Dead-box proteins: a family affair—active and passive players in RNP-remodeling. Nucleic Acids Res. 2006; 34:4168-80.
Abdul-Ghani M, Hartman KL, and Ngsee JK. Abstrakt interacts with and regulates the expression of sorting nexin-2. J. Cell Physiol. 2005; 204:210-8.
Zhang Z, Yuan B, Bao M, et al. The helicase DDX41 senses intracellular DNA mediated by the adaptor STING in dendritic cells. Nat. Immunol. 2011; 12:959-65.

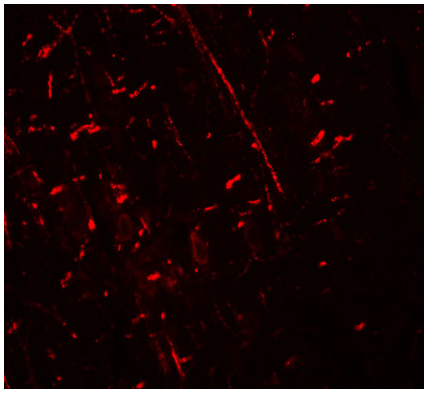
Images



Western blot analysis of DDX41 in rat brain tissue lysate with DDX41 antibody at 1 µg/mL.

Immunohistochemistry of DDX41 in rat brain tissue with DDX41 antibody at 2.5 µg/ml.





Immunofluorescence of DDX41 in rat brain tissue with DDX41 antibody at 20 µg/ml.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.