

Mouse Monoclonal Antibody to DDX1

Purified Mouse Monoclonal Antibody

Catalog # AO2400a

Product Information

Application	WB, IHC, FC, ICC, E
Primary Accession	Q92499
Reactivity	Human, Mouse
Host	Mouse
Clonality	Monoclonal
Clone Names	3E5E2
Isotype	Mouse IgG1
Calculated MW	82432
Description	DEAD box proteins, characterized by the conserved motif Asp-Glu-Ala-Asp (DEAD), are putative RNA helicases. They are implicated in a number of cellular processes involving alteration of RNA secondary structure such as translation initiation, nuclear and mitochondrial splicing, and ribosome and spliceosome assembly. Based on their distribution patterns, some members of this family are believed to be involved in embryogenesis, spermatogenesis, and cellular growth and division. This gene encodes a DEAD box protein of unknown function. It shows high transcription levels in 2 retinoblastoma cell lines and in tissues of neuroectodermal origin.;
Immunogen	Purified recombinant fragment of human DDX1 (AA: 642-740) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide
Application Note	ELISA: 1/10000; WB: 1/500 - 1/2000; IHC: 1/200 - 1/1000; ICC: 1/200 - 1/1000; FCM: 1/200 - 1/400

Additional Information

Gene ID	1653
Other Names	DBP-RB; UKVH5d
Dilution	WB~~1:1000 IHC~~1:100~500 FC~~1:10~50 ICC~~N/A E~~N/A
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 DDX1 is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name DDX1

Function Acts as an ATP-dependent RNA helicase, able to unwind both RNA-RNA and RNA-DNA duplexes. Possesses 5' single-stranded RNA overhang nuclease activity. Possesses ATPase activity on various RNA, but not DNA polynucleotides. May play a role in RNA clearance at DNA double-strand breaks (DSBs), thereby facilitating the template-guided repair of transcriptionally active regions of the genome. Together with RELA, acts as a coactivator to enhance NF-kappa-B-mediated transcriptional activation. Acts as a positive transcriptional regulator of cyclin CCND2 expression. Binds to the cyclin CCND2 promoter region. Associates with chromatin at the NF-kappa-B promoter region via association with RELA. Binds to poly(A) RNA. May be involved in 3'-end cleavage and polyadenylation of pre-mRNAs. Component of the tRNA-splicing ligase complex required to facilitate the enzymatic turnover of catalytic subunit RTCB: together with archease (ZBTB8OS), acts by facilitating the guanylation of RTCB, a key intermediate step in tRNA ligation (PubMed:[24870230](#)). Component of a multi-helicase-TICAM1 complex that acts as a cytoplasmic sensor of viral double-stranded RNA (dsRNA) and plays a role in the activation of a cascade of antiviral responses including the induction of pro-inflammatory cytokines via the adapter molecule TICAM1. Specifically binds (via helicase ATP-binding domain) on both short and long poly(I:C) dsRNA (By similarity).

Cellular Location Nucleus. Cytoplasm. Cytoplasmic granule. Cytoplasm, cytosol {ECO:0000250|UniProtKB:Q91VR5}. Mitochondrion {ECO:0000250|UniProtKB:Q91VR5}. Note=Localized with MBNL1, TIAL1 and YBX1 in stress granules upon stress. Localized with CSTF2 in cleavage bodies. Forms large aggregates called DDX1 bodies. Relocalized into multiple foci (IR-induced foci or IRIF) after IR treatment, a process that depends on the presence of chromosomal DNA and/or RNA-DNA duplexes. Relocalized at sites of DNA double-strand breaks (DSBs) in an ATM-dependent manner after IR treatment. Colocalized with RELA in the nucleus upon TNF-alpha induction. Enters into the nucleus in case of active transcription while it accumulates in cytosol when transcription level is low (PubMed:24608264). Colocalizes in the cytosol with DDX21, DHX36 and TICAM1. Colocalizes in the mitochondria with TICAM1 and poly(I:C) RNA ligand. The multi-helicase-TICAM1 complex may translocate to the mitochondria upon poly(I:C) stimulation (By similarity) {ECO:0000250|UniProtKB:Q91VR5, ECO:0000269|PubMed:24608264}

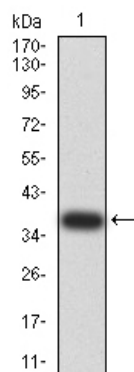
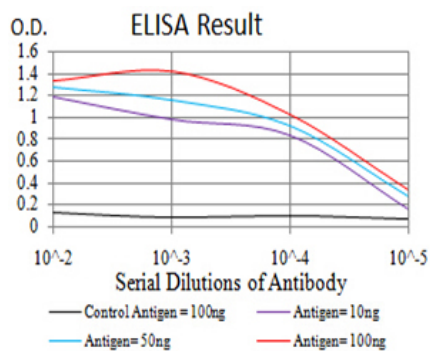
Tissue Location Highest levels of transcription in 2 retinoblastoma cell lines and in tissues of neuroectodermal origin including the retina, brain, and spinal cord.

References

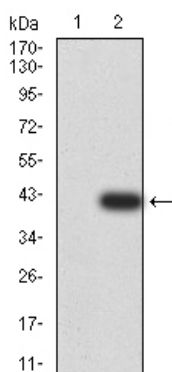
1.Exp Cell Res. 2013 Aug 15;319(14):2244-53. ; 2.Breast Cancer Res Treat. 2011 May;127(1):53-63.;

Images

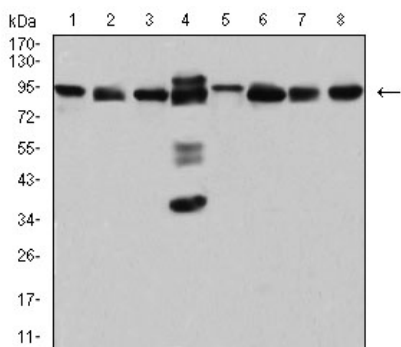
Black line: Control Antigen (100 ng);Purple line: Antigen (10ng); Blue line: Antigen (50 ng); Red line:Antigen (100 ng)



Western blot analysis using DDX1 mAb against human DDX1 (AA: 642-740) recombinant protein. (Expected MW is 37 kDa)

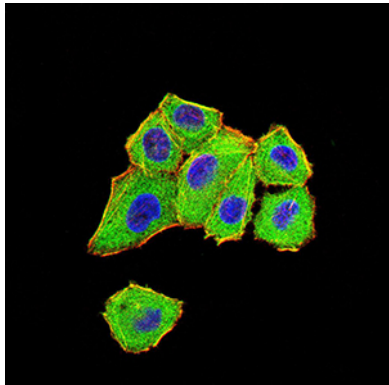
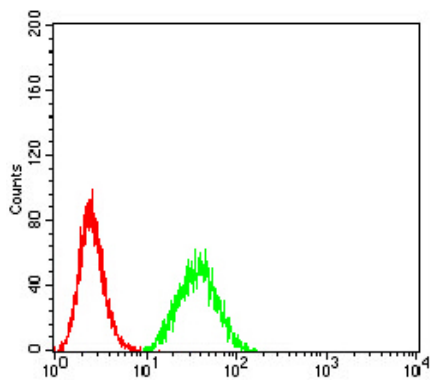


Western blot analysis using DDX1 mAb against HEK293 (1) and DDX1 (AA: 642-740)-hIgGFc transfected HEK293 (2) cell lysate.

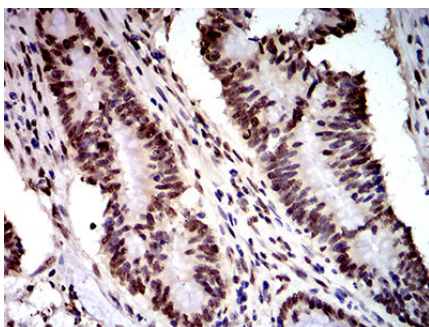


Western blot analysis using DDX1 mouse mAb against HeLa (1), MCF-7 (2), A431 (3), PC-3 (4), NIH/3T3 (5), Jurkat (6), U251 (7), and HEK293 (8) cell lysate.

Flow cytometric analysis of HeLa cells using DDX1 mouse mAb (green) and negative control (red).



Immunofluorescence analysis of HeLa cells using DDX1 mouse mAb (green). Blue: DAPI fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor-555 phalloidin. Secondary antibody from Fisher



Immunohistochemical analysis of paraffin-embedded colon cancer tissues using DDX1 mouse mAb with DAB staining.

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