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ADAR

Purified Mouse Monoclonal Antibody
Catalog # AO2526a

Product Information

Application	WB, IHC, ICC, E
Primary Accession	P55265
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	4E2E4
Isotype	Mouse IgG1
Calculated MW	136066
Immunogen	Purified recombinant fragment of human ADAR (AA: 1085-1223) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide

Additional Information

Gene ID	103
Other Names	DSH; AGS6; G1P1; IFI4; P136; ADAR1; DRADA; DSRAD; IFI-4; K88DSRBP
Dilution	WB~~ 1/500 - 1/2000 IHC~~1:100~500 ICC~~ 1/200 - 1/1000 E~~ 1/10000
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	ADAR is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ADAR
Synonyms	ADAR1, DSRAD, G1P1, IFI4
Function	Catalyzes the hydrolytic deamination of adenosine to inosine in double-stranded RNA (dsRNA) referred to as A-to-I RNA editing (PubMed:12618436, PubMed:7565688, PubMed:7972084). This may affect gene expression and function in a number of ways that include mRNA translation by changing codons and hence the amino acid sequence of proteins since the translational machinery read the inosine as a guanosine; pre-mRNA splicing by altering splice site recognition sequences; RNA stability

by changing sequences involved in nuclease recognition; genetic stability in the case of RNA virus genomes by changing sequences during viral RNA replication; and RNA structure- dependent activities such as microRNA production or targeting or protein-RNA interactions. Can edit both viral and cellular RNAs and can edit RNAs at multiple sites (hyper-editing) or at specific sites (site- specific editing). Its cellular RNA substrates include: bladder cancer- associated protein (BLCAP), neurotransmitter receptors for glutamate (GRIA2) and serotonin (HTR2C) and GABA receptor (GABRA3). Site-specific RNA editing of transcripts encoding these proteins results in amino acid substitutions which consequently alters their functional activities. Exhibits low-level editing at the GRIA2 Q/R site, but edits efficiently at the R/G site and HOTSPOT1. Its viral RNA substrates include: hepatitis C virus (HCV), vesicular stomatitis virus (VSV), measles virus (MV), hepatitis delta virus (HDV), and human immunodeficiency virus type 1 (HIV-1). Exhibits either a proviral (HDV, MV, VSV and HIV-1) or an antiviral effect (HCV) and this can be editing-dependent (HDV and HCV), editing-independent (VSV and MV) or both (HIV-1). Impairs HCV replication via RNA editing at multiple sites. Enhances the replication of MV, VSV and HIV-1 through an editing-independent mechanism via suppression of EIF2AK2/PKR activation and function. Stimulates both the release and infectivity of HIV-1 viral particles by an editing-dependent mechanism where it associates with viral RNAs and edits adenosines in the 5'UTR and the Rev and Tat coding sequence. Can enhance viral replication of HDV via A-to-I editing at a site designated as amber/W, thereby changing an UAG amber stop codon to an UIG tryptophan (W) codon that permits synthesis of the large delta antigen (L-HDAg) which has a key role in the assembly of viral particles. However, high levels of ADAR1 inhibit HDV replication.

Cellular Location

[Isoform 1]: Cytoplasm. Nucleus. Note=Shuttles between the cytoplasm and nucleus (PubMed:24753571, PubMed:7565688). Nuclear import is mediated by TNPO1 (PubMed:24753571).

Tissue Location

Ubiquitously expressed, highest levels were found in brain and lung (PubMed:7972084). Isoform 5 is expressed at higher levels in astrocytomas as compared to normal brain tissue and expression increases strikingly with the severity of the tumor, being higher in the most aggressive tumors.

References

1.Cell Res. 2015 Apr;25(4):459-76. 2.PLoS One. 2014 Oct 1;9(10):e108476.

Images

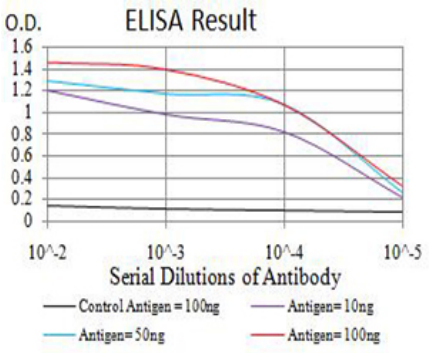
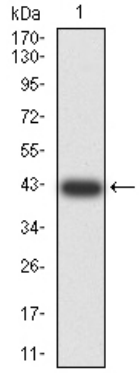


Figure 1:Black line: Control Antigen (100 ng);Purple line: Antigen (10ng); Blue line: Antigen (50 ng); Red line:Antigen (100 ng)

Figure 2:Western blot analysis using ADAR mAb against human ADAR (AA: 1085-1223) recombinant protein.



(Expected MW is 42.1 kDa)

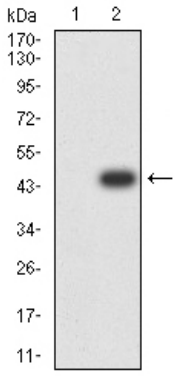


Figure 3:Western blot analysis using ADAR mAb against HEK293 (1) and ADAR (AA: 1085-1223)-hIgGFc transfected HEK293 (2) cell lysate.

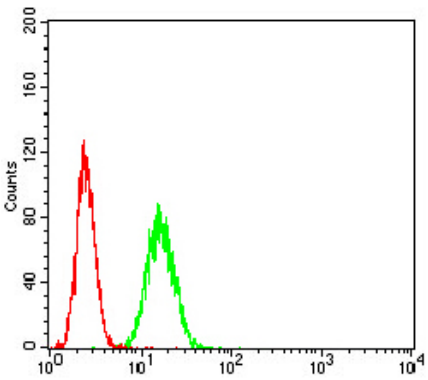


Figure 5:Flow cytometric analysis of Hela cells using ADAR mouse mAb (green) and negative control (red).

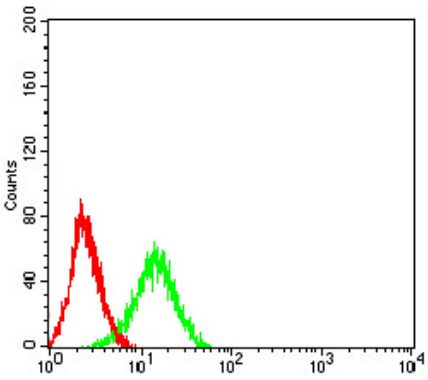
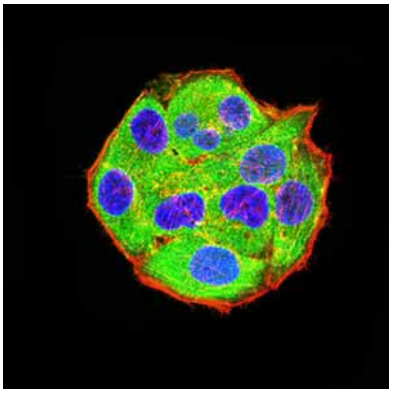


Figure 6:Flow cytometric analysis of Jurkat cells using ADAR mouse mAb (green) and negative control (red).

Figure 4:Immunofluorescence analysis of Hela cells using ADAR mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor- 555 phalloidin. Secondary antibody from Fisher (Cat#: 35503)



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