

Recombinant Human DSRAD Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50265

Size: 10ug, 100ug

Protein Name: Double-stranded RNA-specific adenosine deaminase (DRADA) (EC 3.5.4.37) (136 kDa double-stranded RNA-binding protein) (p136) (Interferon-inducible protein 4) (IFI-4) (K88DSRBP)

Synonym: ADAR, ADAR1, DSRAD, G1P1, IFI4

UniProt ID: P55265

UniProt Link: www.uniprot.org/uniprotkb/P55265/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1226 AA

Molecular Weight: 136 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MNPRQGYSLSGYYTHPFQGYEHRQLRYQQPGPGSSPSSFLLKQIEFLKGQLPEAPVIGKQTPSLPP
SLPGLRPRFPVLLASSTRGRQVDIRGVPRGVHLRSQGLQRGFQHPSPRGRSLPQRGVDCCLSSHQ
ELSIYQDQEQRILKFLEELGEGKATTAHDLGKLGTPKKEINRVLYSLAKKGKLQKEAGTPPLWKIAVS
TQAWNQHSGVVRPDGHSQGAPNSDPSLEPEDRNSTSVSEDLLEPFIASQAQAWNQHSGVVRPDS
HSQGSPNSDPGLEPEDSNSTSALEDPLEFLDMAEIKEKICDYLFNVSDSSALNLAKNIGLTKARDINA
VLIDMERQGDVYRQGTTPPIWHLTDKKRERMQIKRNTNSVPETAPAAIPETKRNAEFLTCNIPTSNAS
NNMVTTEKVENGGQEPVIKLENRQEARPEPARLKPPVHYNGPSKAGYVDFENGQWATDDIPDDLNSI
RAAPGEFRAIMEMPSFYSHGLPRCSPYKKLTECQLKNPISGLLEYAQFASQTCEFNMIQSGPPHEP
RFKFQVVINGREFPPAEAGSKKQDAAMKAMTILLEAKAKDSGKSEESSHYSTEKESEKTAESQ
TPTPSATSFSSGKSPVTTLLCEMHKLGNSCEFRLLSKEGPAHEPKFQYCVAVGAQTFPSVSAPSKKV
AKQMAAEEAMKALHGEATNSMASDNQPEGMISESLDNLESMPNPKVRKIGELVRYLNTNPVGGLLE
YARSHGFAAEFKLVDQSGPPHEPKFVYQAKVGGRWFPVCAHSSKKQKQEAADAALRVLIGENEK
AERMGFTEVTPVTGASLRRTMLLSRSPEAQPKTLPLTGSTFHDQIAMLSHRCFNTLTNSFQPSLLG
RKILAAIIMKKDSEDMGVVVS LGTGNRCVKGDSLSLKGTVNDCHAEIISRRGFIRFLYSELKYNYSQ
TAKDSIFEPAGGGEKLQIKKTVSFHLYISTAPCGDGFALDKSCSDRAMESTESRHYPVFENPKQGKL
RTKVENGEGTIPVESSDIVPTWDGIRLGERLRTMSCSDKILRWNVLGLQGALLTHFLQPIYLKSVTLG
YLFSQGH LTRAICCRVTRDGS AFEDGLRHPFIVNHPKVGRVSIYDSKRQSGKTKETSVNWCLADGY



DLEILDGTRGTVDGPRNELSRVSKKNIFLLFKKLCSFRYRRDLLRLSYGEAKKAARDYETAKNYFKKG
LKDMGYGNWISKPQEEKNFYLCVP

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Double-stranded RNA-specific adenosine deaminase (DRADA) (EC 3.5.4.37) (136 kDa double-stranded RNA-binding protein) (p136) (Interferon-inducible protein 4) (IFI-4) (K88DSRBP) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein 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 UGA 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.

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

(PubMed:24753571).; [Isoform 5]: Cytoplasm . Nucleus . Nucleus, nucleolus . Note=Predominantly nuclear but can shuttle between nucleus and cytoplasm. TNPO1 can mediate its nuclear import whereas XPO5 can mediate its nuclear export.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.