

Recombinant Human RED1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50839

Size: 10ug, 100ug

Protein Name: Double-stranded RNA-specific editase 1 (EC 3.5.4.37) (RNA-editing deaminase 1) (RNA-editing enzyme 1) (dsRNA adenosine deaminase)

Synonym: ADARB1, ADAR2, DRADA2, RED1

UniProt ID: P78563

UniProt Link: www.uniprot.org/uniprotkb/P78563/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 741 AA

Molecular Weight: 81 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MDIEDEENMSSSSTDVKENRNLDNVSPKDGSTPGPGEGSQLSNGGGGGPGRKRPLEEGSNGH
SKYRLKKRRKTPGPVLPKNALMQLNEIKPGLQYTLLSQTGPVHAPLFVMSVEVNGQVFEGSGPTKKKA
KLHAAEKALRSFVQFPNASEAHLAMGRTL SVNTDFTSDQADFPDTL FNGFETPDKAEPFFYVGSNG
DDSFSSSGDLSLSASPVPASLAQPPLPVLPFPFPPPSGKNPVMILNELRPGLKYDFLSESGESHAKSF
VMSVVVDGQFFEGSGRNNKLAKARAAQSALAAIFNLHLDQTPSRQPIPSEGLQLHLPQVLADAVSRL
VLGKFGDLTDNFSSPHARRKVLGVMTTGT DVKDAKVISVSTG TKCINGEYMSDRGLALNDCHAEII
SRRSLLRFLYTQLELYLNNKDDQKRSIFQKSERGGFRLKENVQFHLYISTSPCGDARIFSPHEPILEG
SRSYTQAGVQWCNHGSLQPRPPGLLSDPSTSTFQGAGTTEPADRHPNPKARGQLRTKIESGEGTIP
VRNASIQTDGVLQGERLLTMSCDKIARWNVVG IQGSLLSIFVEPIYFSSIILGSLYHGDHL SRAMY
QRISNIEDLPPLYTLNKPLLSGISNAEARQPGKAPNFSVNWTVGDSAIEVINATTGKDELGRASRLCK
HALYCRWMRVHGKVPSHLLRSKITKPNVYHESKLA AKEYQAAKARLFTAFIKAGLGAWVEKPTEQD
QFSLTP

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 editase 1 (EC 3.5.4.37) (RNA-editing deaminase 1) (RNA-editing enzyme 1) (dsRNA adenosine deaminase) 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. 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; 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 GRIK2) and serotonin (HTR2C), GABA receptor (GABRA3) and potassium voltage-gated channel (KCNA1). Site-specific RNA editing of transcripts encoding these proteins results in amino acid substitutions which consequently alter their functional activities. Edits GRIA2 at both the Q/R and R/G sites efficiently but converts the adenosine in hotspot1 much less efficiently. Can exert a proviral effect towards human immunodeficiency virus type 1 (HIV-1) and enhances its replication via both an editing-dependent and editing-independent mechanism. The former involves editing of adenosines in the 5'UTR while the latter occurs via suppression of EIF2AK2/PKR activation and function. Can inhibit cell proliferation and migration and can stimulate exocytosis.; [Isoform 1]: Has a lower catalytic activity than isoform 2.; [Isoform 2]: Has a higher catalytic activity than isoform 1.

Subcellular Localization: Nucleus . Nucleus, nucleolus . Note=Shuttles between nucleoli and the nucleoplasm.; [Isoform 1]: Nucleus . Nucleus, nucleolus .; [Isoform 2]: Nucleus . Nucleus, nucleolus .

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.