

Recombinant Mouse IRG1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51473

Size: 10ug, 100ug

Protein Name: Cis-aconitate decarboxylase (CAD) (EC 4.1.1.6) (Aconitate decarboxylase) (Aconitate decarboxylase 1) (Cis-aconitic acid decarboxylase) (Immune-responsive gene 1 protein)

Synonym: Acod1, Irg1

UniProt ID: P54987

UniProt Link: www.uniprot.org/uniprotkb/P54987/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 488 AA

Molecular Weight: 54 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MMLKSVTESFAGMIHGLKVNHLTDGIIRRSKRMILDSLGVGFLGTGTEVFHKVTQYSKIYSSNTSSTV
WGRPDPFRLPPTYAAFVNGVAVHSMDFDDTWHPATHPSGAVLPVLTALSEALPQIPKFSGLDLLLAFN
VGIEVQGRLMHFSKEAKDIPKRFHPPSVVGTLSAAAASKFLGLSLTKCREALAIIVSHAGAPIANAA
TQTKPLHIGNAAKHGMEATFLAMLGLQGKQILDGSGFGAFYANYSPEDLPSLDShiWLLDQQDVA
FKSFPAHLATHWVADAAAARVKHLVTPERALFPADHIERIVLRIPDVQYVNRPFDPSEHEARHSFQYV
ACASLLDGSITVPSFHSQQVNRQVRELLKKVKLEHPPDNPPSFDTLTYCEISITLKDGTTFTERSDTFY
GHWKRPLSQEDLRNKFRANASKMLCRDVTESLITVVEKLEDLEDCSVLTRLLKGPSVQDEASKLSS
MSSFDHTTLPRFTNI

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 Cis-aconitate decarboxylase (CAD) (EC 4.1.1.6) (Aconitate decarboxylase) (Aconitate decarboxylase 1) (Cis-aconitic acid decarboxylase) (Immune-responsive gene 1 protein) 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: Cis-aconitate decarboxylase that catalyzes production of itaconate and is involved in the inhibition of the inflammatory response (PubMed:23609450, PubMed:23610393, PubMed:30635240, PubMed:31548418). Acts as a negative regulator of the Toll-like receptors (TLRs)-mediated inflammatory innate response by stimulating the tumor necrosis factor alpha-induced protein TNFAIP3 expression via reactive oxygen species (ROS) in LPS-tolerized macrophages (PubMed:23609450). Involved in antimicrobial response of innate immune cells; ACOD1-mediated itaconic acid production contributes to the antimicrobial activity of macrophages by generating itaconate, leading to alkylation of proteins, such as TFEB (PubMed:23610393, PubMed:35662396). Involved in antiviral response following infection by flavivirus in neurons: ACOD1-mediated itaconate production inhibits the activity of succinate dehydrogenase, generating a metabolic state in neurons that suppresses replication of viral genomes (PubMed:30635240). Plays a role in the embryo implantation (PubMed:14500577).

Subcellular Localization: Mitochondrion .

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.