

Recombinant Mouse ADCY7 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51462

Size: 10ug, 100ug

Protein Name: Adenylate cyclase type 7 (EC 4.6.1.1) (ATP pyrophosphate-lyase 7) (Adenylate cyclase type VII) (Adenylyl cyclase 7) (Cyclic di-AMP synthase ADCY7) (EC 2.7.7.85)

Synonym: Adcy7

UniProt ID: P51829

UniProt Link: www.uniprot.org/uniprotkb/P51829/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1099 AA

Molecular Weight: 123 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MPAKGRYFLNEGDEGPDQAALYEKYRLTSLHGPLLLLLLLVAAATCIALISIAFSHEDLRRHQVVLGTA
FLMLTLFVALYVLVYVECLVQRWLRALALLTWACLMVLGSLMWDSLENEAHAWEQVPFFLFVVFV
VYALLPLSRRAAIVAGVTSTVSHLLVFGAVTRAFQTSMSSTQLGLQLLANAVILLGGNFTGAFHKHQL
QDASRDLFIYTVKCIQIRKLRVEKRQQENLLLSVLPAHISMGMKLAIERLKEGGDRHYMPDNNFHSL
YVKRHQNVSILYADIVGFTRLASDCSPKELVVVLNELFGKFDQIAKANECMRIKLGDCYYCVSGLPVS
LPTHARNVCVMGLDICEAIKQVREATGVDISMRVGIHSGNVLCGVIGLRKWQYDVWSDVSLANRM
EAAGVPGRVHITEATLNHLDKAYEVEDGHGEQRDPYLKEMNIRTYLVIDPRSQQPPPPSHHLSKPKG
DATLKMRAVRVTRYLESWGAARPFALNHRESVSSSETPISNGRRQKAIPRRHRAPDRSASPKG
RLEDDCDDDEMLSAIEGLSSTRPCCSKSDDFHTFGPIFLEKGFEREYRLVPIPRARYDFACASLVFVCIL
LVHLLVMPRMATLGVSFGLVACLLGLVLSFCFATEFSRCFSPRSTLQAISESVETQPLVRLVLVVLTV
GSLTVAIINMPLTLNPGPEQPQDGNKTSPLAAQNRVGTCPCELLPYTTCSCILGFIACSVFLRMSLELKA
MLLTVALVAYLLLFNLSPCWHVSGNSTETNGTQRTRLLLSDAQSMPSHTLAPGARETAPSPSYLERD
LKIMVNFYLILFYATLILLSRQIDYYCRLDCLWKKKFKKEHEEFETMENVNRLLENVLPAAHVAHFIDG
KAAEDWYHQSYDCVCMFASVPDFKVIFYTECDVNKEGLECLRLLNEIADFDELLLPKFKSGVEKIKT
IGSTYMAAAGLSAPSGHENQDLERKHVHIGVLVEFSMALMSKLDGINRHSFNSFRLRVGINHGPVIA
GVIGARKPQYDIWGNTVNVASRMESTGELGKIQVTEETCTILQGLGYSCECRGLINVKGKGELRTYF
VCTDTAKFQGLGLN

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 Adenylate cyclase type 7 (EC 4.6.1.1) (ATP pyrophosphate-lyase 7) (Adenylate cyclase type VII) (Adenylyl cyclase 7) (Cyclic di-AMP synthase ADCY7) (EC 2.7.7.85) 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: Adenylate cyclase that mediates formation of both cyclic AMP (cAMP) and cyclic di-AMP (c-di-AMP) (PubMed:18205980, PubMed:23229509, PubMed:40419769). Acts as a key mediator of G protein-coupled receptor signaling by catalyzing the formation of cAMP downstream of G protein-coupled receptors (By similarity). Functions in G protein-coupled receptor signaling cascades activated by thrombin, sphingosine 1-phosphate, dopamine and anaphylatoxin C5a (By similarity). Mediates regulation of cAMP synthesis through synergistic action of the G alpha protein G(s) (GNAS) with G(13) (GNA13) (PubMed:18541530, PubMed:23178822). Also involved in inflammation by acting as a diadenylate cyclase that catalyzes the condensation of 2 ATP molecules into c-di-AMP (PubMed:40419769). Following activation by TLR9, mediates formation of c-di-AMP, which directly activates NLRP3, thereby promoting assembly and maturation of the NLRP3 inflammasome (PubMed:40419769). It is also required for the optimal functions of B- and T cells during adaptive immune responses by regulating cAMP synthesis in both B- and T-cells (PubMed:20505140).

Subcellular Localization: Membrane; Multi-pass membrane protein.

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.