

Recombinant Mouse ABCD1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51437

Size: 10ug, 100ug

Protein Name: ATP-binding cassette sub-family D member 1 (EC 3.1.2.-) (EC 7.6.2.-)
(Adrenoleukodystrophy protein) (ALDP)

Synonym: Abcd1, Ald, Aldgh

UniProt ID: P48410

UniProt Link: www.uniprot.org/uniprotkb/P48410/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 736 AA

Molecular Weight: 82 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MPVLSTPRPSRVTTLKRTAVVLALTAYGVHkiYPLVRQCLTPARGPQVPAGEPTQEASGATATKAGM
NRVFLQRLLALLRLLFPRVLCRETGLLALHSAALVSRTFLSVYVARLDGRLARCIVRKDPRAFSWQLL
QWLLIALPATFINSAIRYLEGQLALSFRSRLVAHAYGLYFSQQTYRVSNDGRLRNPQSLTEDVVA
FAASVAHLYSNLTKPLLDVAVTSYTLRAARSRGAGTAWPSAIALGLVFLTANVLAFAFSPKFGELVAE
EARRKGELRYMHSRVVANSEEIAFYGGHEVELALLQHSYQDLASQINLILLERLWYVMLEQFLMKYV
WSASGLLMVAVPIITATGYAESDSEAMKKALEMKEEELVSETEAFTIARNLLTAAADATERIMSSY
KEVTELAGYTARVYEMFQVFEDVKHCRFKRTGDLEEAQAGPGVMVQSGVHVEGPLKIQGQVVDVE
QGIICENIPIITPTGEVVVASLNIRVEEGMHLLITGPNCGCKSSLFRILGGLWPTYSGVLYKPPPQRMFY
IPQRPYMSVGLSLRDQVIYPDSAEDMRRKGCSEQQLEAILGIVHLRHILQREGGWEAVCDWKDVLG
GEKQRIGMARMFYHRPKYALLDECTSAVSIDVEGKIFQAADAGIALLSITHRPSLWKYHHTLLQFDG
EGGWKFEKLDSAARLSLTEEKQRLEQQLAGIPKMQGRLQELRQILGEAAPVQPLVPGVPT

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 ATP-binding cassette sub-family D member 1 (EC 3.1.2.-) (EC 7.6.2.-) (Adrenoleukodystrophy protein) (ALDP) 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: ATP-dependent transporter of the ATP-binding cassette (ABC) family involved in the transport of very long chain fatty acid (VLCFA)-CoA from the cytosol to the peroxisome lumen. Has fatty acyl-CoA thioesterase (ACOT) and ATPase activities. Coupled to the ATP-dependent transporter activity also has a fatty acyl-CoA thioesterase activity (ACOT) and hydrolyzes VLCFA-CoA into VLCFA prior their ATP-dependent transport into peroxisomes, the ACOT activity is essential during this transport process (By similarity). Thus, plays a role in regulation of VLCFAs and energy metabolism namely, in the degradation and biosynthesis of fatty acids by beta-oxidation, mitochondrial function and microsomal fatty acid elongation (PubMed:18854420, PubMed:23123468, PubMed:23604518, PubMed:25255441, PubMed:25583114, PubMed:26108493, PubMed:9126326, PubMed:9256488, PubMed:9418970). Involved in several processes; namely, controls the active myelination phase by negatively regulating the microsomal fatty acid elongation activity and may also play a role in axon and myelin maintenance (PubMed:11875044, PubMed:15489218, PubMed:26108493). Also controls the cellular response to oxidative stress by regulating mitochondrial functions such as mitochondrial oxidative phosphorylation and depolarization (PubMed:18344354, PubMed:22521832, PubMed:23604518, PubMed:25583114). And finally controls the inflammatory response by positively regulating peroxisomal beta-oxidation of VLCFAs (PubMed:18723473).

Subcellular Localization: Peroxisome membrane ; Multi-pass membrane protein . Mitochondrion membrane ; Multi-pass membrane protein . Lysosome membrane ; Multi-pass membrane protein . Endoplasmic reticulum 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.