

Recombinant Human ABCD1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50008

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

UniProt ID: P33897

UniProt Link: www.uniprot.org/uniprotkb/P33897/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 745 AA

Molecular Weight: 83 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MPVLSRPRPWGNTLKRTAVLLALAAAYGAHKVYPLVRQCLAPARGLQAPAGEPTQEASGVAAAKA
GMNRVFLQRLLWLLRLLFPRVLCRETGLLALHSAALVSRTFLSVYVARLDGRLARCIVRKDPRAFGW
QLLQWLLIALPATFVNSAIRYLEGQLALSFRSRLVAHAYRLYFSQQTYRVSNDGRLRNPQSLTE
DVVAFASVAHLYSNLTKPLLDVAVTSYTLRAARSRGAGTAWPSAIGLVVFLTANVLRAFSPKFGE
LVAEEARRKGELRYMHSRVVANSEEIAFYGGHEVELALLQRSYQDLASQINLILLERLWYVMLEQFL
MKYVWSASGLLMVAVPIITATGYSESDAEAVKKAALKKEEELVSETEAFTIARNLLTAAADAIERIM
SSYKEVTELAGYTARVHEMFQVFEDVQRCHFMRPRELEDAQAGSGTIGRSGVRVEGPLKIRGQVVD
VEQGIICENIPIVTPSGEVVVASLNIRVEEGMHLLITGPNCGCKSSLFRILGGLWPTYGGVLYKPPPQR
MFYIPQRPYMSVGLRDQVIYVPSVEDMQRKGYSEQDLEAILDVVHLHHILQREGGWEAMCDWKD
VLSGGEKQRIGMARMFYHRPKYALLDECTSAVSIDVEGKIFQAAKDAGIALLSITHRPSLWKYHTHLL
QFDGEGGWKFELDSAARLSLTEEKQRLEQQLAGIPKMQRRLQELCQILGEAVAPAHVPAPSPQGP
GGLQGAST

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 (PubMed:11248239, PubMed:15682271, PubMed:16946495, PubMed:18757502, PubMed:21145416, PubMed:23671276, PubMed:29397936, PubMed:33500543). 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 (PubMed:29397936, PubMed:33500543). 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:21145416, PubMed:23671276). 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. Also controls the cellular response to oxidative stress by regulating mitochondrial functions such as mitochondrial oxidative phosphorylation and depolarization. And finally controls the inflammatory response by positively regulating peroxisomal beta-oxidation of VLCFAs (By similarity).

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.