Recombinant ABCD1 protein (His tag)

Catalog Number	546926
Synonyms	Adrenoleukodystrophy protein; ALDP
Species	Human
Expression System	E. coli
Accession	P33897
Molecular Weight	Predictes a molecular mass of 29.85 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 30 kDa band.

Product Information

Sequence Region	494-745
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>86%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 494-745 aa (P33897) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	This product is a high-quality recombinant protein fragment of human ATP-binding cassette sub-family D member 1 (ABCD1), corresponding to amino acids 494-745. This 252-amino acid fragment has been computationally selected for optimal stability and solubility, making it an ideal tool for structural studies and biochemical characterization of this critical peroxisomal transporter. ATP-binding cassette sub-family D member 1 (ABCD1), also known as adrenoleukodystrophy protein (ALDP), is an ATP-dependent transporter that plays a crucial role in peroxisomal metabolism. This multi-pass membrane protein facilitates the transport of very long chain fatty acid (VLCFA)-CoA from the cytosol into peroxisomes, coupled with fatty acyl-CoA thioesterase activity that hydrolyzes VLCFA-CoA prior to transport. ABCD1 is localized primarily to the peroxisome membrane, with additional presence in mitochondrial, lysosomal, and endoplasmic reticulum membranes. The protein regulates VLCFA metabolism through beta-oxidation, influences mitochondrial function and microsomal fatty acid elongation, controls cellular response to oxidative stress, and modulates inflammatory responses through peroxisomal beta-oxidation pathways. Dysfunction in ABCD1 is associated with adrenoleukodystrophy, highlighting its clinical significance in lipid metabolism disorders.