

**ABCD1 Antibody (Center) Blocking Peptide**  
**Synthetic peptide**  
**Catalog # BP10454c**

### Specification

#### ABCD1 Antibody (Center) Blocking Peptide - Product Information

Primary Accession  
Other Accession

[P33897](#)  
[NP\\_000024.2](#)

#### ABCD1 Antibody (Center) Blocking Peptide - Additional Information

##### Gene ID 215

##### Other Names

ATP-binding cassette sub-family D member 1, Adrenoleukodystrophy protein, ALDP, ABCD1, ALD

##### Format

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

##### Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

##### Precautions

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

#### ABCD1 Antibody (Center) Blocking Peptide - Protein Information

##### Name [ABCD1 \(HGNC:61\)](#)

##### Synonyms ALD

##### 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:<a href="http://www.uniprot.org/citations/11248239" target="\_blank">11248239</a>, PubMed:<a href="http://www.uniprot.org/citations/15682271" target="\_blank">15682271</a>, PubMed:<a href="http://www.uniprot.org/citations/16946495" target="\_blank">16946495</a>, PubMed:<a href="http://www.uniprot.org/citations/18757502" target="\_blank">18757502</a>, PubMed:<a href="http://www.uniprot.org/citations/21145416" target="\_blank">21145416</a>, PubMed:<a href="http://www.uniprot.org/citations/23671276" target="\_blank">23671276</a>, PubMed:<a href="http://www.uniprot.org/citations/29397936" target="\_blank">29397936</a>, PubMed:<a href="http://www.uniprot.org/citations/33500543" target="\_blank">33500543</a>). 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:<a href="http://www.uniprot.org/citations/29397936" target="\_blank">29397936</a>, PubMed:<a href="http://www.uniprot.org/citations/33500543" target="\_blank">33500543</a>). 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:<a href="http://www.uniprot.org/citations/21145416" target="\_blank">21145416</a>, PubMed:<a href="http://www.uniprot.org/citations/23671276" target="\_blank">23671276</a>). 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).

#### **Cellular Location**

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

#### **ABCD1 Antibody (Center) Blocking Peptide - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- [Blocking Peptides](#)

#### **ABCD1 Antibody (Center) Blocking Peptide - Images**

#### **ABCD1 Antibody (Center) Blocking Peptide - Background**

ABCD1 is a member of the superfamily of ATP-binding cassette (ABC) transporters. ABC proteins transport various molecules across extra- and intra-cellular membranes. ABC genes are divided into seven distinct subfamilies (ABC1, MDR/TAP, MRP, ALD, OABP, GCN20, White). This protein is a member of the ALD subfamily, which is involved in peroxisomal import of fatty acids and/or fatty acyl-CoAs in the organelle. All known peroxisomal ABC transporters are half-transporters which require a partner half transporter molecule to form a functional homodimeric or heterodimeric transporter. This peroxisomal membrane protein is likely involved in the peroxisomal transport or catabolism of very long chain fatty acids. Defects in this gene have been identified as the underlying cause of adrenoleukodystrophy, an X-chromosome recessively inherited demyelinating disorder of the nervous system.

#### **ABCD1 Antibody (Center) Blocking Peptide - References**

Matsukawa, T., et al. Neurogenetics (2010) In press : Xie, H.H., et al. Zhonghua Yi Xue Yi Chuan Xue Za Zhi 27(2):144-148(2010) Li, J.Y., et al. J. Neurol. Sci. 290 (1-2), 163-165 (2010) : Hour, T.C., et al. Int. J. Biol. Markers 24(3):171-178(2009) Shukla, P., et al. J. Child Neurol. 24(7):857-860(2009)