

## ABCD subfamily of peroxisomal ABC transporters (version 2019.4) in the IUPHAR/BPS Guide to Pharmacology Database

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### Abstract

Peroxisomes are indispensable organelles in higher eukaryotes. They are essential for the oxidation of a wide variety of metabolites, which include: saturated, monounsaturated and polyunsaturated fatty acids, branched-chain fatty acids, bile acids and dicarboxylic acids [3]. However, the peroxisomal membrane forms an impermeable barrier to these metabolites. The mammalian peroxisomal membrane harbours three ATP-binding cassette (ABC) half-transporters, which act as homo- and/or heterodimers to transport these metabolites across the peroxisomal membrane.

### Contents

This is a citation summary for ABCD subfamily of peroxisomal ABC transporters in the [Guide to Pharmacology](#) database (GtoPdb). It exists purely as an adjunct to the database to facilitate the recognition of citations to and from the database by citation analyzers. Readers will almost certainly want to visit the relevant sections of the database which are given here under database links.

[GtoPdb](#) is an expert-driven guide to pharmacological targets and the substances that act on them. GtoPdb is a reference work which is most usefully represented as an on-line database. As in any publication this work should be appropriately cited, and the papers it cites should also be recognized. This document provides a citation for the relevant parts of the database, and also provides a reference list for the research cited by those parts.

Please note that the database version for the citations given in GtoPdb are to the most recent preceding version in which the family or its subfamilies and targets were substantially changed. The links below are to the current version. If you need to consult the cited version, rather than the most recent version, please contact the GtoPdb curators.

### Database links

[ABCD subfamily of peroxisomal ABC transporters](#)

<http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=154>

Transporters

[ALDP\(ABCD1\)](#)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=788>

[ALDR\(ABCD2\)](#)

<http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=789>

## References

1. Coelho D, Kim JC, Miousse IR, Fung S, du Moulin M, Buers I, Suormala T, Burda P, Frapolli M and Stucki M *et al.*. (2012) Mutations in ABCD4 cause a new inborn error of vitamin B12 metabolism *Nat. Genet.* **44**: 1152-5 [[PMID:22922874](#)]
2. Ferdinandusse S, Jimenez-Sanchez G, Koster J, Denis S, Van Roermund CW, Silva-Zolezzi I, Moser AB, Visser WF, Gulluoglu M and Durmaz O *et al.*. (2015) A novel bile acid biosynthesis defect due to a deficiency of peroxisomal ABCD3. *Hum. Mol. Genet.* **24**: 361-70 [[PMID:25168382](#)]
3. Kemp S, Theodoulou FL and Wanders RJ. (2011) Mammalian peroxisomal ABC transporters: from endogenous substrates to pathology and clinical significance. *Br. J. Pharmacol.* **164**: 1753-66 [[PMID:21488864](#)]
4. van Roermund CW, Visser WF, Ijlst L, van Cruchten A, Boek M, Kulik W, Waterham HR and Wanders RJ. (2008) The human peroxisomal ABC half transporter ALDP functions as a homodimer and accepts acyl-CoA esters. *FASEB J.* **22**: 4201-8 [[PMID:18757502](#)]
5. van Roermund CW, Visser WF, Ijlst L, Waterham HR and Wanders RJ. (2011) Differential substrate specificities of human ABCD1 and ABCD2 in peroxisomal fatty acid  $\beta$ -oxidation. *Biochim. Biophys. Acta* **1811**: 148-52 [[PMID:21145416](#)]