

SLC66 Lysosomal amino acid transporters in GtoPdb v.2021.2

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Abstract

This is a family of 5 evolutionarily related proteins. Their structural similarities suggest that they are transporters. Biochemical evidence supports transporter activity for SLC66A1 (LAAT1) and SLC66A4 (CTNS; Cystinosin). The functions of the 3 remaining members of the family are undetermined.

Contents

This is a citation summary for SLC66 Lysosomal amino acid 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. For further details see [1].

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

SLC66 Lysosomal amino acid transporters

<https://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=1048>

Transporters

[solute carrier family 66 member 1](#)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=3160>

[solute carrier family 66 member 2](#)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=3161>

[solute carrier family 66 member 3](#)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=3162>

[cystinosin, lysosomal cystine transporter](#)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=3163>

[mannose-P-dolichol utilization defect 1](#)

<https://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=3164>

References

1. Buneman P, Christie G, Davies JA, Dimitrellou R, Harding SD, Pawson AJ, Sharman JL and Wu Y. (2020) Why data citation isn't working, and what to do about it *Database* **2020** [PMID:32367113]
2. Kalatzis V, Cherqui S, Antignac C and Gasnier B. (2001) Cystinosin, the protein defective in cystinosis, is a H(+)-driven lysosomal cystine transporter. *EMBO J* **20**: 5940-9 [PMID:11689434]
3. Liu B, Du H, Rutkowski R, Gartner A and Wang X. (2012) LAAT-1 is the lysosomal

lysine/arginine transporter that maintains amino acid homeostasis. *Science* **337**: 351-4
[\[PMID:22822152\]](#)

4. Ruivo R, Belenchi GC, Chen X, Zifarelli G, Sagné C, Debacker C, Pusch M, Supplisson S and Gasnier B. (2012) Mechanism of proton/substrate coupling in the heptahelical lysosomal transporter cystinosin. *Proc Natl Acad Sci U S A* **109**: E210-7 [\[PMID:22232659\]](#)