Molecular species selectivity of lipid transport creates a mitochondrial sink for di-unsaturated phospholipids

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Reporting Checklist For Life Sciences Articles (Rev. June 2017)

This checklist is used to ensure good reporting standards and to improve the reproducibility of published results. These guidelines are consistent with the Principles and Guidelines for Reporting Preclinical Research issued by the NIH in 2014. Please follow the journal’s authorship guidelines in preparing your manuscript.

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1. Data

The data shown in figures should satisfy the following conditions:
- the data were obtained and processed according to the field’s best practice and are presented to reflect the results of the experiments in an accurate and unbiased manner;
- figure panels include only data points, measurements or observations that can be compared to each other in a scientifically meaningful way;
- graphs include clearly labeled error bars for independent experiments and sample sizes. Unless justified, error bars should not be shown for technical replicates;
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- figure panels include only data points, measurements or observations that can be compared to each other in a scientifically meaningful way;
- Source Data should be included to report the data underlying graphs. Please follow the guidelines set out in the author ship guidelines on Data Presentation.

2. Captions

Each figure caption should contain the following information, for each panel where they are relevant:
- a specification of the experimental system investigated (e.g cell line, species name);
- the assay(ies) and method(s) used to carry out the reported observations and measurements;
- an explicit mention of the biological and chemical entity(ies) that are being measured;
- an explicit mention of the biological and chemical entity(ies) that are altered/varied/perturbed in a controlled manner;
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- definitions of statistical methods and measures:
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  - are tests one-sided or two-sided?
  - are tests based on parametric or non-parametric assumptions?
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  - definition of ‘center values’ as median or average;
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Any descriptions too long for the figure legend should be included in the methods section and/or with the source data.

If the pink boxes below, please ensure that the answers to the following questions are reported in the manuscript itself. Every question should be answered. If the question is not relevant to your research, please write NA (non applicable). We encourage you to include a specific subsection in the methods section for statistics, reagents, animal models and human subjects.

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| Question                                                                 | Answer |
|-------------------------------------------------------------------------|--------|
| 1.a. How was the sample size chosen to ensure adequate power to detect a pre-specified effect size? | N/A    |
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Please fill out these boxes ✅ (Do not worry if you cannot see all your text once you press return)
in the variance similar between the groups that are being statistically compared? Yes.

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6. To show that antibodies were profiled for use in the system under study (assay and species), provide a citation, catalog number and/or clone number, supplementary information or reference to an antibody validation profile. e.g., Antibodypedia (see link list at top right), 1D4grew2s (see link list at top right).

7. Identify the source of cell lines and report if they were recently authenticated (e.g., by STR profiling) and tested for mycoplasma contamination. N/A

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Data availability statement has been provided.

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All lipidomics data is provided in supplementary datasets.

20. Access to human clinical and genetic datasets should be provided with as few restrictions as possible while respecting ethical obligations to the patients and relevant medical and legal issues. If practically possible and compatible with the individual consent agreement used in the study, such data should be deposited in one of the major public access-controlled repositories such as dbGaP (see link list at top right) or EGA (see link list at top right).

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