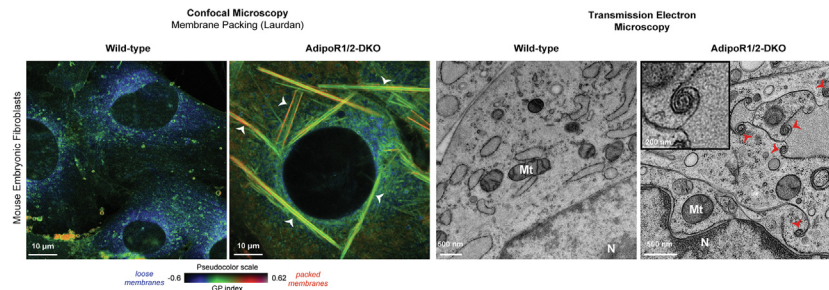


Striking membrane defects in AdipoR-deficient cells

Mario Ruiz^{*,†}, Dimitra Panagaki[‡], Johanna L. Höög[§], and Marc Pilon^{*,§}

Department of Chemistry and Molecular Biology, University of Gothenburg, Gothenburg, Sweden



Membrane homeostasis defects likely underly numerous conditions. AdipoR1 and AdipoR2 sense excesses of saturated fatty acids in phospholipids and correct such imbalance by generating sphingosine 1-phosphate that promotes fatty acid desaturation via sterol regulatory-element binding protein and peroxisome proliferator-activated receptor gamma (1–3).

Mouse embryonic fibroblasts lacking AdipoR1 and AdipoR2 (AdipoR1/2 double KO) and treated with palmitic acid form abnormal endoplasmic reticulum structures: long straight lines visualized by confocal microscopy (white arrows), whereas electron micrographs reveal distinctive spirals of packed membranes (red arrows) that are likely cross-sections of the lines seen with Laurdan staining (1). These endoplasmic reticulum structures are not present in basal conditions (1).

EQUIPMENT AND REAGENTS: LSM880 confocal microscope with Airyscan (Zeiss), Laurdan dye, palmitic acid, Wohlwend Compact 3 high pressure freezer, Leica AFS, Tecnai T12 transmission electron microscope, Ceta CMOS 16M camera (1).

Author contributions

M. R. conceptualization; M. R. and D. P. investigation; J. L. H. and M. P. resources; M. R. and D. P. writing—original draft; M. R., D. P., J. L. H., and M. P. writing—review & editing; J. L. H. and M. P. supervision.

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Author ORCIDs

Mario Ruiz <https://orcid.org/0000-0002-7149-6600>

Johanna L. Höög <https://orcid.org/0000-0003-2162-3816>

Marc Pilon <https://orcid.org/0000-0003-3919-2882>

Conflict of interest

The authors declare that they have no conflicts of interest with the contents of this article.

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[†]These authors contributed equally to this work.

^{*}For correspondence: Mario Ruiz, mario.ruiz@gu.se; Marc Pilon, marc.pilon@cmbgu.se.

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