METABOLIC ADAPTATION OF PODOCYTES TO LIPID EXPOSURE

Aurore Hecq^{1,2}, Antoine Nortier¹, Marine Thirion¹, Emmanuel Esteve¹, Thierry Arnould², Anne-Emilie Declèves¹.

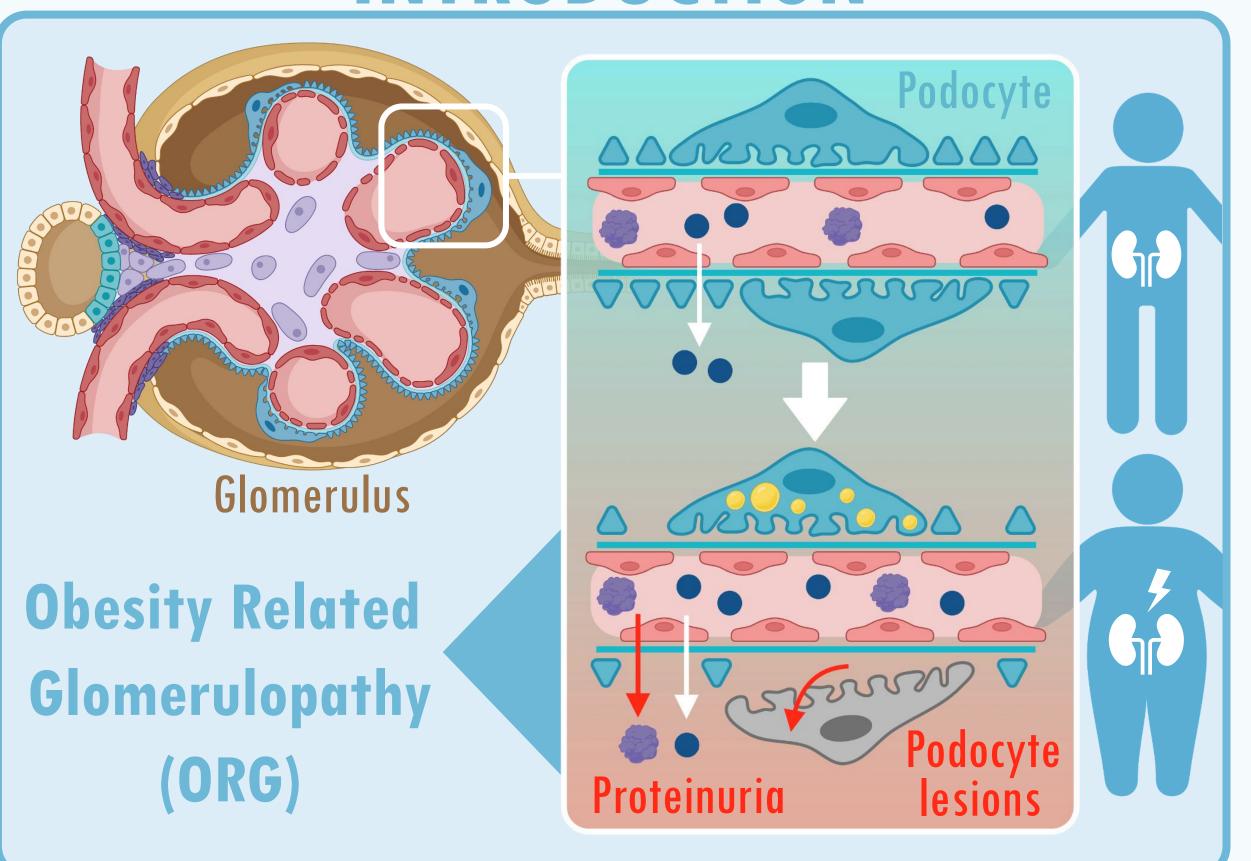


1 Laboratory of Metabolic and Molecular Biochemistry, Research Institute for Health Sciences and Technology, University of Mons (UMONS), Mons, Belgium.

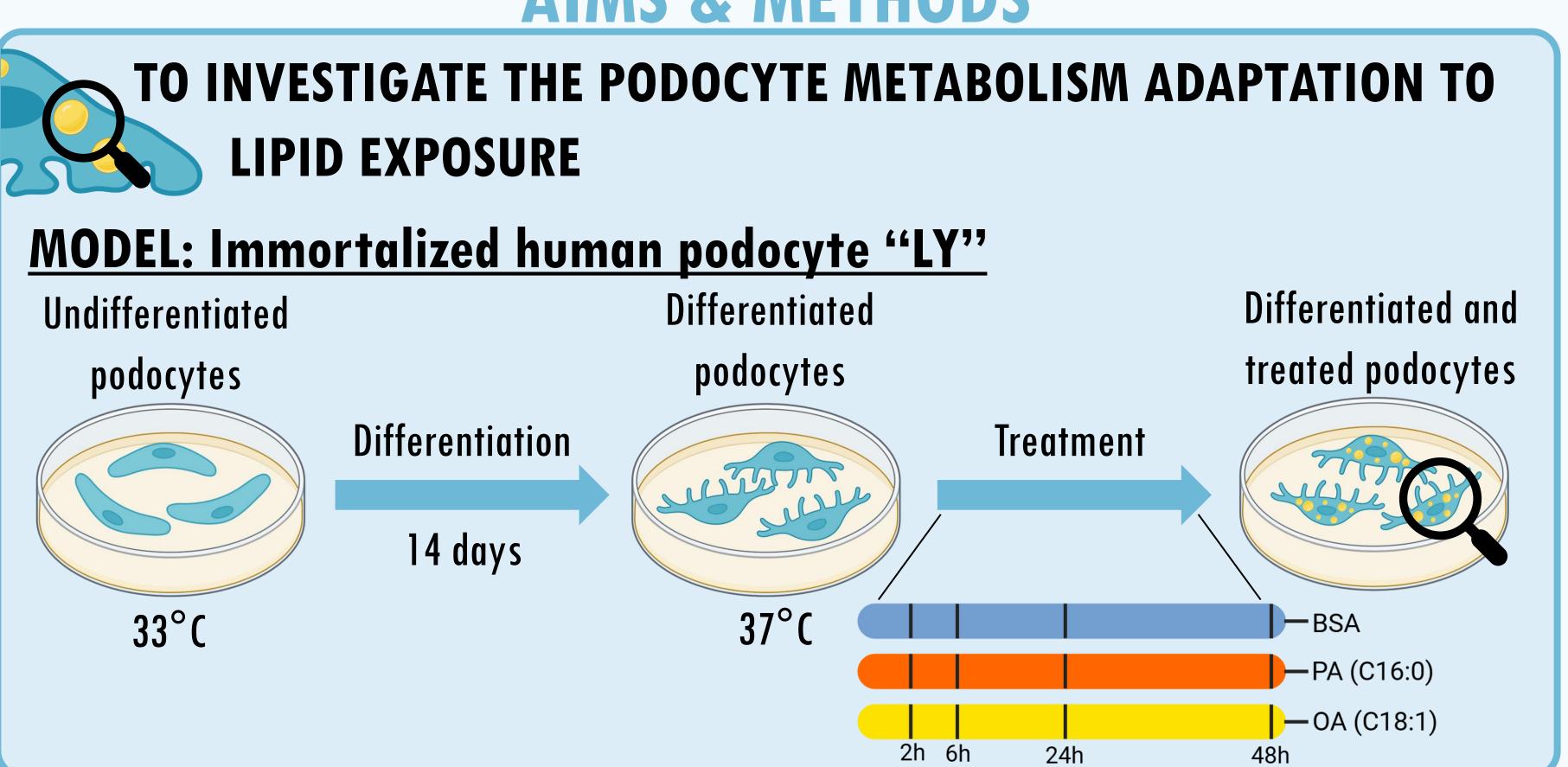
2 Laboratory of Biochemistry and Cell Biology (URBC), Namur Research Institute for Life Sciences (NARILIS), University of Namur (UNAMUR), Namur, Belgium.



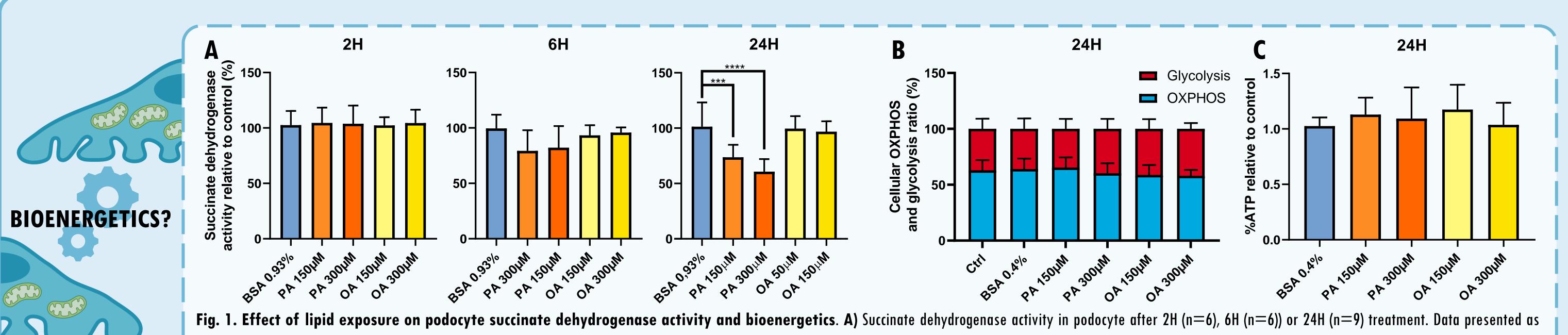
INTRODUCTION



AIMS & METHODS



RESULTS



Means +/- SD, One-way ANOVA + post-test Dunnett's; ***P<0,001, ****P<0,0001. **B)** Podocyte cellular bioenergetics analysis by Seahorse after 24H treatment. Data presented as Means +/- SD, n=6, One-way ANOVA + post-test Dunnett's C) Cellular OXPHOS and glycolysis ratio analysis and ATP relative production. Data presented as Means +/- SD, n=6, One-way ANOVA + post-test Dunnett's.

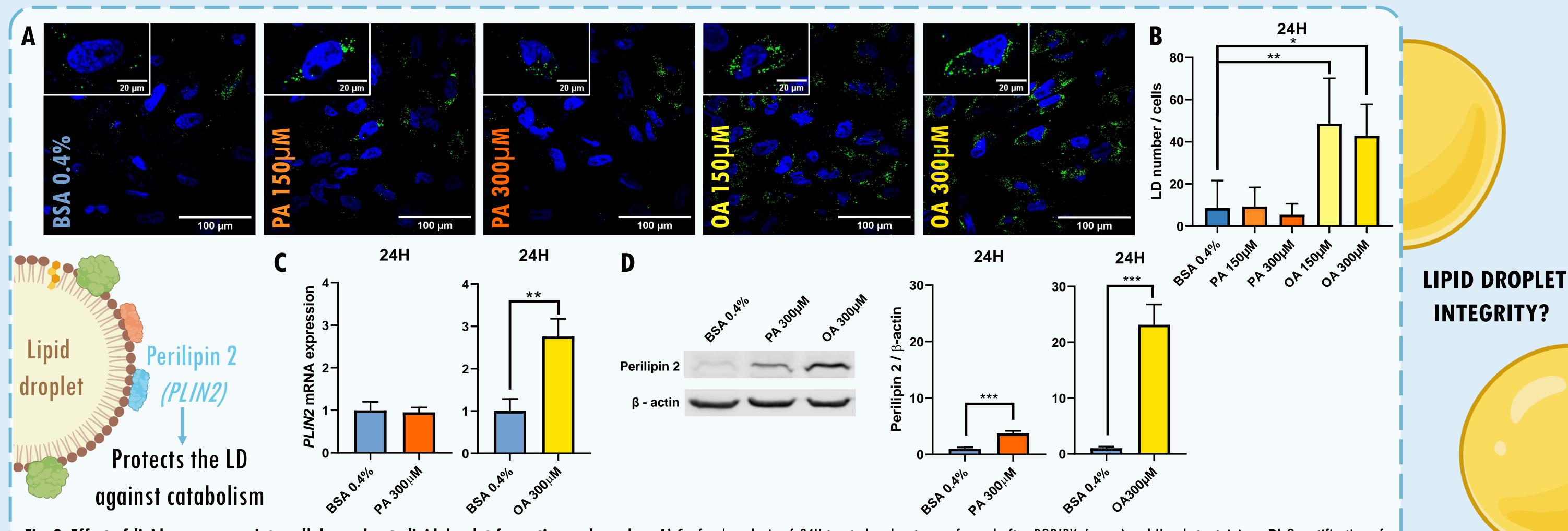
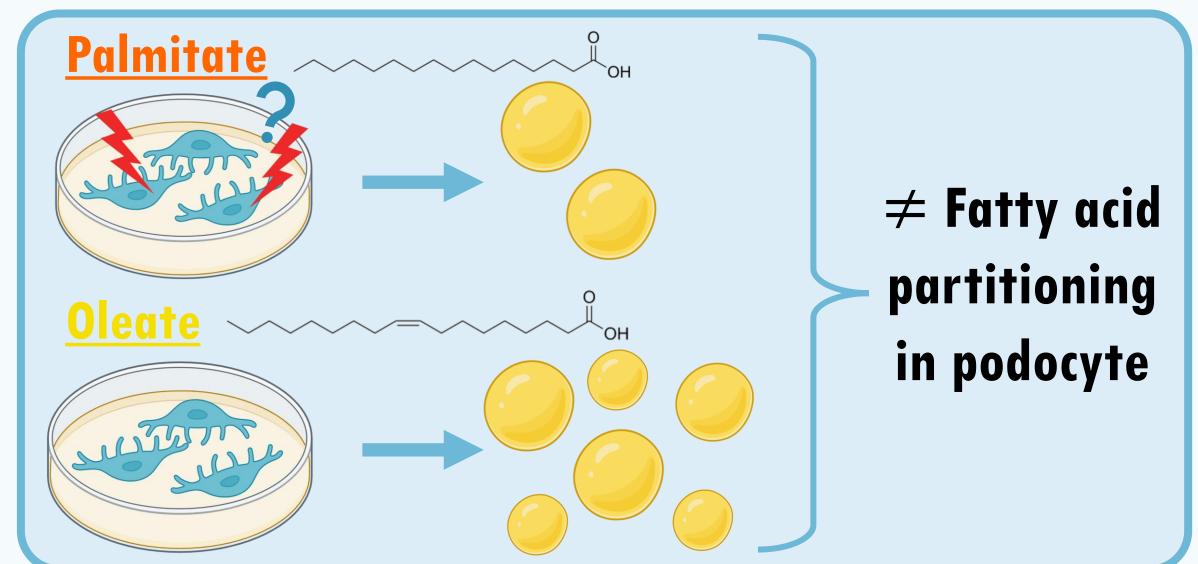


Fig. 2. Effect of lipid exposure on intracellular podocyte lipid droplet formation and number. A) Confocal analysis of 24H treated podocytes performed after BODIPY- (green) and Hoechst- staining. B) Quantification of the number of lipid droplets per cells. Data presented as Means +/- SD, n=4, One-way ANOVA + post-test Dunnett's. *P<0,05, **P<0,01. **C)** Relative *PLIN2* mRNA expression in podocyte after 24H treatment. Data presented as Means +/- SD, n=3, unpaired parametric Student's t test; **P<0,01. **D)** Perilipin 2 abundance in podocyte after 24H treatment. Data presented as Means +/- SD, n=3, unpaired parametric Student's t test; **P<0,001.

PROSPECTS



- Investigation of the various pathways through which palmitate can lead to metabolic disturbances, including mitochondrial integrity, endoplasmic reticulum integrity, ROS production, de novo <u>ceramide</u> synthesis, and <u>cytoskeleton</u> organization.
- In-depth analysis of the lipidome using lipidomic profiling.

Aurore Hecq holds a PHD fellowship from the UMons and UNamur.

