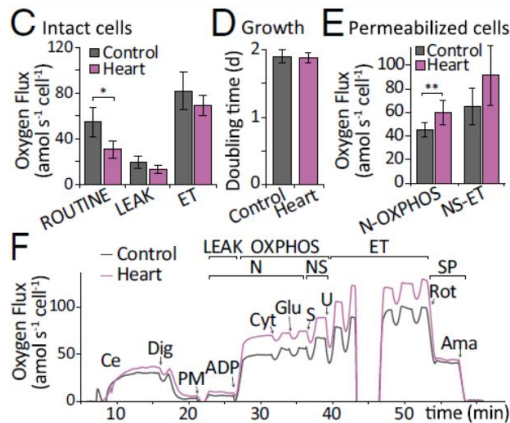


High-Resolution Fluorespirometry and mitochondrial cardiolipins

PNAS Molecular structural diversity of mitochondrial cardiolipins

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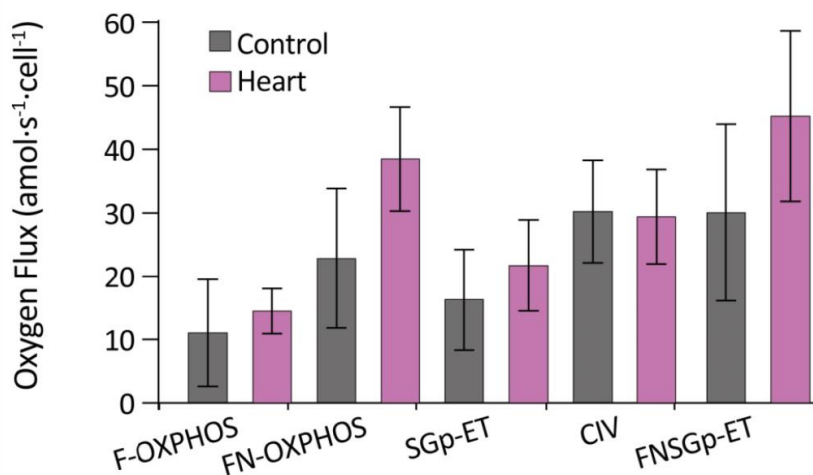


Oxygen flow in intact control and heart samples. (D) Doubling times of control and heart samples ($n = 4$). (E) Oxygen flow in permeabilized control and heart samples. NADH-pathway capacity (N-OXPHOS) was significantly increased upon heart lipid supplementation ($n = 8$, $P = 0.01$, Bonferroni-adjusted with $m = 7$). (F) Representative traces of oxygen flow for experiment shown in E used to calculate respiratory activities in different pathway-control states. Arrows indicate substrate-uncoupler-inhibitor titration steps: ADP, adenosine diphosphate; Ama, antimycin A; Ce, cells; Cyt, cytochrome c; Dig, digitonin; ET, maximal electron transfer capacity in presence of CCCP uncoupler ($n = 4$, Bonferroni-adjusted with $m = 9$); Glu, glutamate; LEAK, respiration after inhibition of ATP synthase; N, NADH-pathway; NS, convergent N- and succinate-pathway; PM, pyruvate and malate; Rot, rotenone; ROUTINE, cell respiration in presence of endogenous substrates; S, succinate; SP, succinate-pathway; U, uncoupler (CCCP).

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High-Resolution Fluorespirometry of permealized HeLa cells

Substrate-uncoupler-inhibitor titrations (SUIT) for OXPHOS analysis



HeLa cells grown in lipid and serum free medium (Control) and pig heart lipids supplemented medium (Heart).

F-OXPHOS: OXPHOS capacity in beta-oxidation of fatty acids

FN-OXPHOS: Combined F- and NADH-linked OXPHOS capacity

SGp-ET: Succinate- and glycerophosphate-supported ET-capacity after inhibition with rotenone and uncoupler titration

CIV: Complex IV activity

FNSGP-ET: ET-capacity in the combined FNSGP-pathway

Consistent increase of NADH-linked respiratory capacity in cells grown in medium supplemented with pig heart lipids.

Mitochondrial respiration medium: MiR05-Kit (OROBOROS INSTRUMENTS Innsbruck, Austria, Product ID: 60101-01, Lot# 0915)

Reference: Oemer G, Lackner L, Muigg K, Krumschnabel G, Watschinger K, Sailer S, Lindner H, Gnaiger E, Wortmann SB, Werner ER, Zschocke J, Keller MA (2018) The molecular structural diversity of mitochondrial cardiolipins. Proc Nat Acad Sci U S A 115:4158-63.