Skeletal muscle

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High-resolution respirometry and mitochondrial supercomplexes

Cell Metabolism
Clinical and Translational Report

Enhanced Respiratory Chain Supercomplex Formation in Response to Exercise in Human Skeletal Muscle

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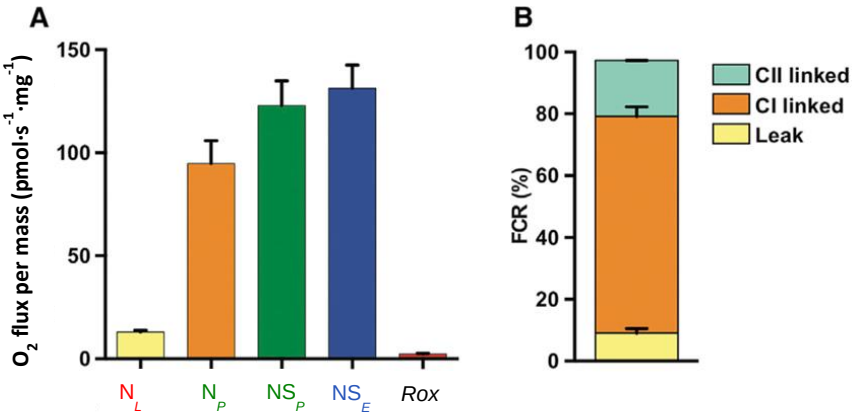
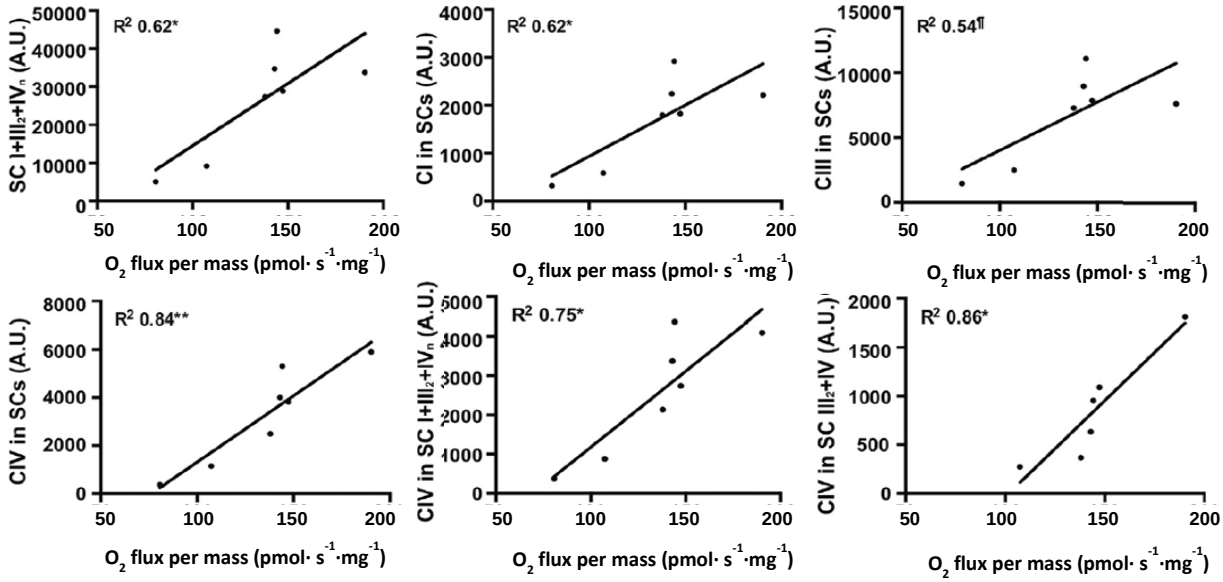
High-resolution respirometry of human skeletal muscle



A. High-resolution respirometry in permeabilized fibers from human muscle biopsies, 60-72 years old volunteers (*N* = 7).
L: LEAK state, cation leak-dependent respiration.
P: OXPHOS state, ADP-stimulated respiration, where N_P corresponds to the N-pathway and NS_P, to the N- and S-pathways together.
E: ET state, noncoupled.
Rox: ROX state is the residual O_2 consumption.
B. Flux control ratios (FCRs) normalized to *E* from *L* and *P* (N_P and NS_P). O_2 fluxes were *Rox* corrected.

High-resolution respirometry and mitochondrial supercomplexes



O_2 flux at ET state is positively related to the amount of supercomplexes (SCs) as well as to the amount of CI, CIII, and CIV in the SCs. The results suggest that respiratory coupling capacity is correlated with SC formation

Reference: Greggio C, Jha P, Kulkarni SS, Lagarrigue S, Broskey NT, Boutant M, Wang X, Conde Alonso S, Ofori E, Auwerx J, Cantó C, Amati F (2017) Enhanced Respiratory Chain Supercomplex Formation in Response to Exercise in Human Skeletal Muscle. Cell Metab 25(2): 301-311.

Figures and texts slightly modified based on the recommendations of the COST Action MitoEAGLE CA15203. Doi:10.26124/mitofit:190001.v3