

High-resolution respirometry for evaluation of mitochondrial function on brain and heart homogenates in a rat model of cardiac arrest and cardiopulmonary resuscitation

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Experimental high-resolution respirometry protocol to evaluate mitochondrial function

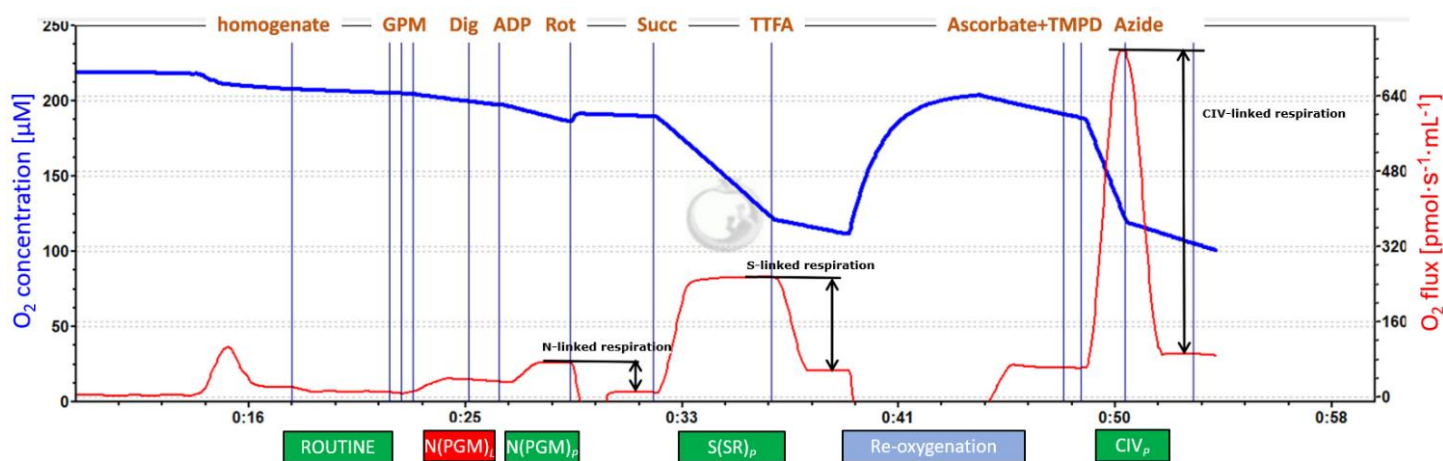
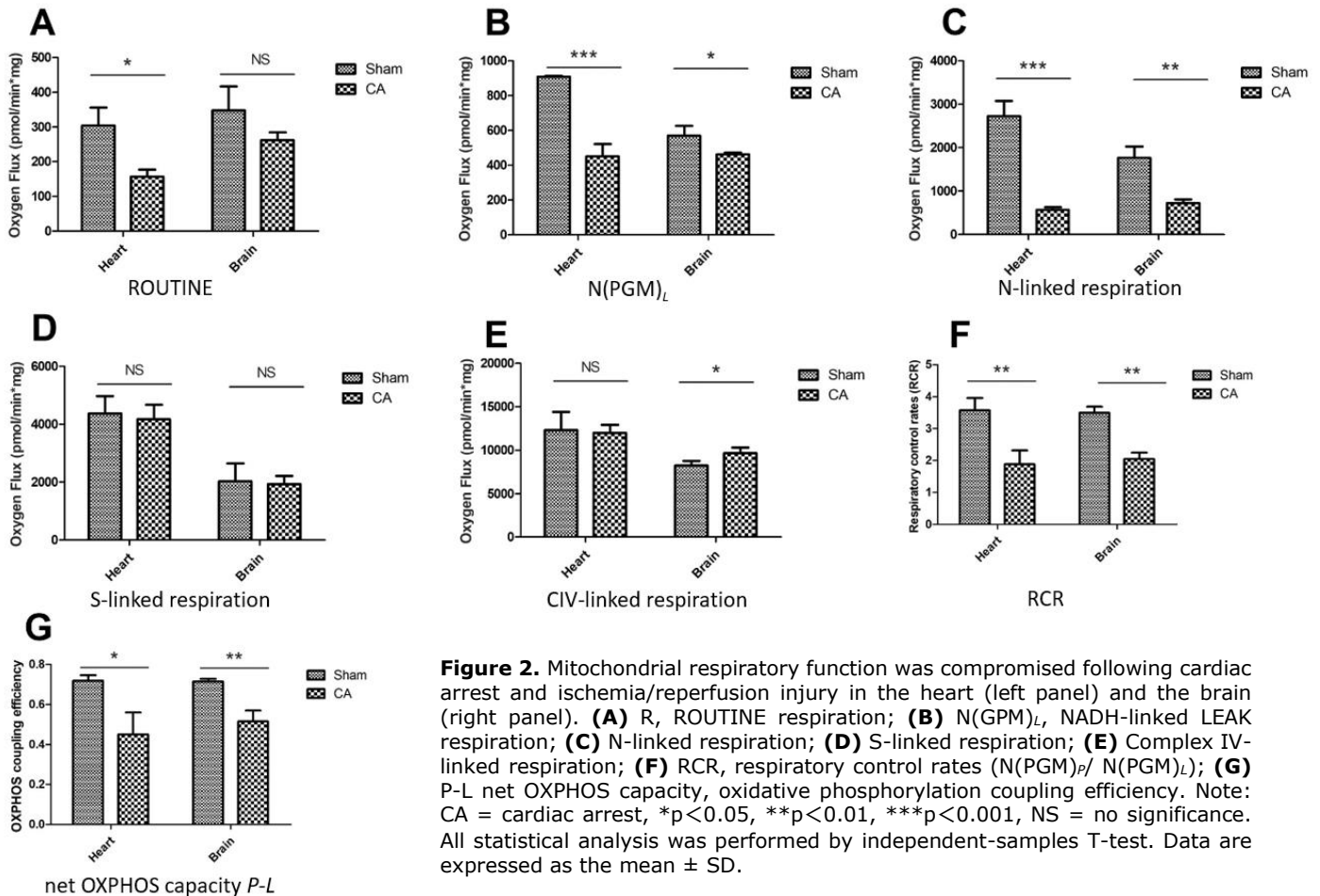


Figure 1. Exemplary respirometry traces outlining the protocol applied in the high-resolution respirometry experiment. The blue line indicates O_2 concentration (μM , left Y-axis), the red line indicates O_2 flux in $pmol \cdot s^{-1} \cdot mL^{-1}$, right Y-axis. $N(PGM)_l$, NADH-linked LEAK respiration; $N(PGM)_p$, NADH-linked OXPHOS capacity; $S(SR)_p$, Succinate-linked OXPHOS capacity; CIV_p , CIV-linked OXPHOS capacity; N-linked respiration = $N(PGM)_p$ —rotenone; S-linked respiration = $S(SR)_p$ —TTFA; CIV-linked respiration = TMPD—azide.

O2k-brief communicated by C Cecatto, S Schmitt and L Tindle-Solomon
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Mitochondrial function of heart and brain following ischemia/reperfusion injury after cardiac arrest



Mitochondrial respiratory function was compromised in brain and heart tissue homogenate of a rat model following cardiac arrest (CA) and ischemia/reperfusion (I/R) injury, with a major effect on NADH-linked respiration. Furthermore, comparing heart and brain tissue homogenate, slight differences were observed in ROUTINE and CIV-linked respiration upon global I/R injury after CA.

Reference: Liang L, Zhang G, Cheng C, Li H, Jin T, Su C, Xiao Y, Bradley J, Peberdy MA, Ornato JP, Mangino MJ, Tang W (2021) High-resolution respirometry for evaluation of mitochondrial function on brain and heart homogenates in a rat model of cardiac arrest and cardiopulmonary resuscitation. *Biomed Pharmacother* 142:111935.

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