

Analysis of respiratory capacity in brain tissue preparations: high-resolution respirometry for intact hippocampal slices

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Evaluation of mitochondrial respiration in hippocampal slices from two different rodent species (rat and mouse) through high-resolution respirometry

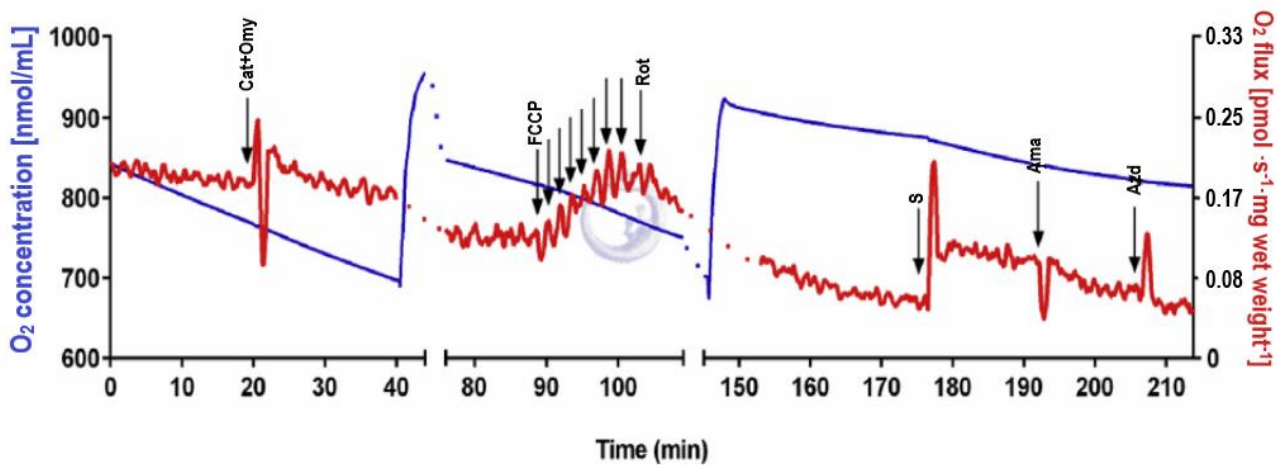


Figure 1. Representative respirometric trace. O₂ concentration (blue line; nmol/mL) and O₂ flux normalized for tissue wet weight (red line; [pmol·s⁻¹·mg wet weight⁻¹]); the arrows indicate the moment of titration of each substrate and inhibitor: carboxyatractyloside (Cat) and oligomycin (Omy), FCCCP (added stepwise), rotenone (Rot), succinate (S), antimycin A (Ama), and sodium azide (Azd)

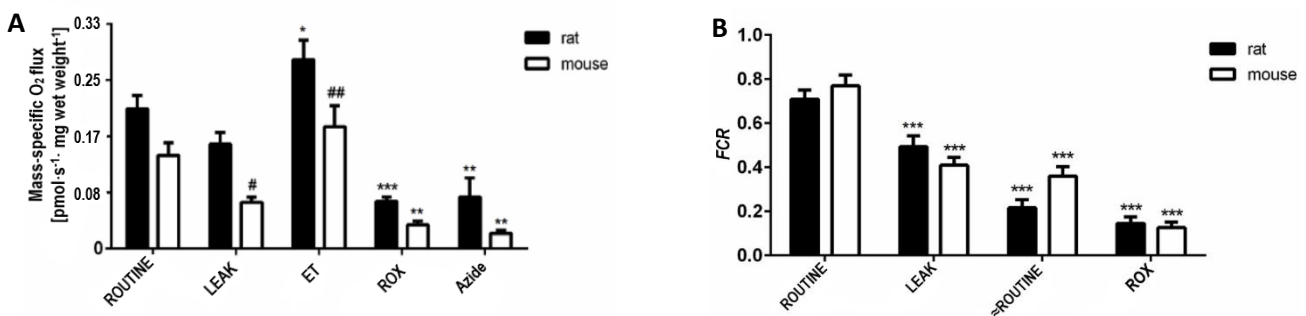


Figure 2. A) Specific flux per wet weight and B) Flux control ratios (FCR) determined for mouse and rat hippocampal slices. Values represent mean ± S.E.M. **p* < 0.05, ***p* < 0.01, ****p* < 0.001 for comparison to ROUTINE in (A) and (B); #*p* < 0.05, ##*p* < 0.01 for comparison between rodent species. ROUTINE respiration corrected for LEAK respiration (free ROUTINE activity, ≈ROUTINE)

This methodology can be a useful asset for assessment of mitochondrial function in a preparation closer to the physiological state and valuable for other applications, such as the study of energy substrates in the brain

Reference: Dias C, Lourenco CF, Barbosa RM, Laranjinha J, Ledo AM (2018) Analysis of respiratory capacity in brain tissue preparations: high-resolution respirometry for intact hippocampal slices *Analyt Biochem* 551(22):43-50.

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