

The Phoxy-Test

A set of methods for assessment of mitochondrial function

Mitochondria play a crucial role in homeostasis regulation, oxidative phosphorylation (OXPHOS), adenosine tri-phosphate (ATP) production and reactive oxygen species (ROS) generation.

The Phoxy-Test provides a global evaluation of the mitochondrial function from cell lines or tissues micro-biopsies

Mitochondrial investigation needs accurate tools for bioenergetics profile and metabolism.

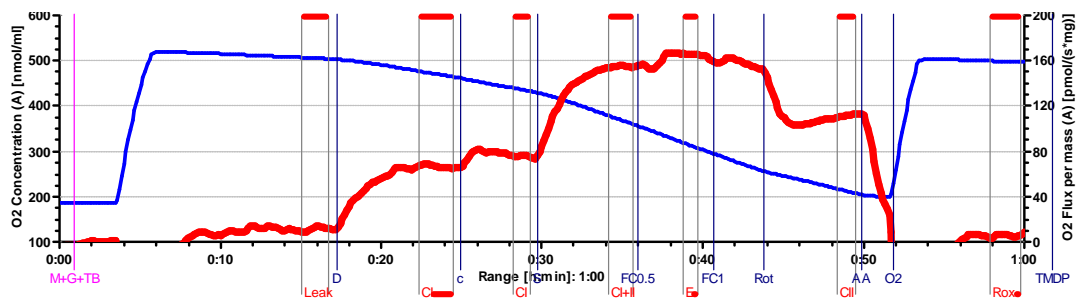
- High Resolution Oxymetry (HRO): use for O₂ consumption rate (OCR), Maximal capacity respiratory (MCR) and OXPHOS capacity
- Electron Paramagnetic Resonance (EPR or ESR): detection of free radicals
- Fluorescence: intracellular detection of ROS generation
- Cell viability, ATP production, cytochrome C release, ...



Muscle micro-biopsy in horses



High Resolution Oxygraph



High Resolution Oximetry (HRO) for tissue, cells and isolated mitochondria.
(Assays for OXPHOS capacity, OCR, ..)

References

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3. [Specific immuno-extraction followed by enzymatic detection \(SIEFED\) of myeloperoxidase and mitochondrial complex I in muscular microbiopsies: preliminary results in endurance horses.](#) Franck T, Votion DM, Ceusters J, De La Rebière de Pouyade G, Mouithys-Mickalad A, Niesten A, Fraipont A, Van Erck E, Goachet AG, Robert C, Serteyn D. Equine Vet J Suppl. 2010 Nov;(38):296-302.
4. [Effect of myeloperoxidase and anoxia/reoxygenation on mitochondrial respiratory function of cultured primary equine skeletal myoblasts.](#) Ceusters JD, Mouithys-Mickalad AA, Franck TJ, Derochette S, Vanderplasschen A, Deby-Dupont GP, Serteyn DA. Mitochondrion. 2013 Sep;13(5):410-6.