


Top 10 reasons for Oroboros Instruments

Oroboros Instruments

High-Resolution Respirometry - HRR
Schöpfstr. 18, A-6020 Innsbruck, Austria
Email: instruments@orooboros.at; www.orooboros.at



Oroboros O2k
High-Resolution Respirometry

Mitochondria
and cell research


Explore mitochondria to study:

- Exercise physiology
- Aging
- Neurodegeneration
- Diabetes
- Cancer
- O₂ consumption
- H₂O₂ production
- ATP production
- Membrane potential
- pH, Ca²⁺, NO


www.orooboros.at




10 compelling reasons for the Oroboros O2k, and for collaborating with Oroboros Instruments - our **O2k-Top10** corporate committment.

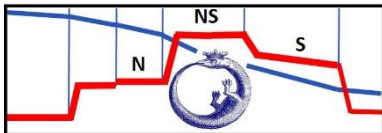
1. High-resolution - only the best is good for science. 



2. Long-term experience. Applications of >1,100 O2k worldwide transform bioenergetics to mitochondrial and cell physiology. Mitochondrial energy metabolism is studied with the O2k in **exercise physiology, aging, cancer, diabetes, neurodegeneration, oxidative stress, and mitochondrial medicine** in general. 


High-resolution respirometry (HRR) combines measurement and control of oxygen concentration and respiratory oxygen flux with monitoring ROS production, mitochondrial membrane potential, ATP production, Ca^{2+} , pH, and NO – all in one chamber. The technical features make the O2k a '**sole source**' instrument. 


3. **Meet the experts** at the outstanding O2k-Workshops for training in HRR.

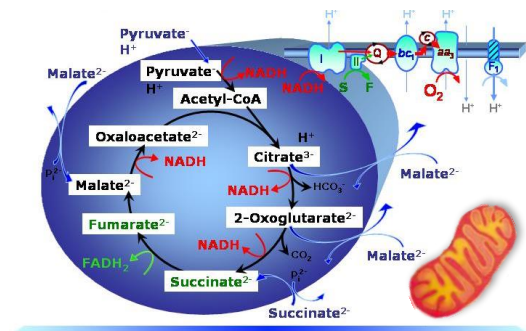



O2k-Workshops

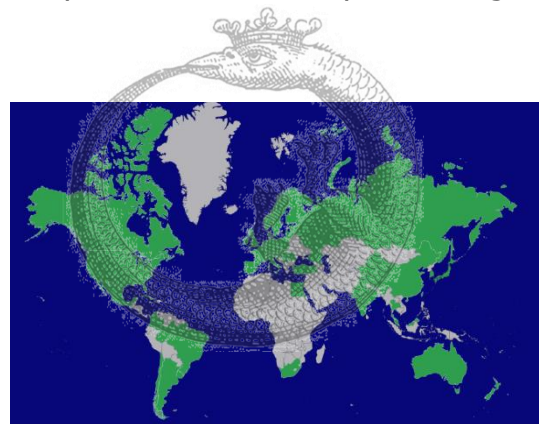


O2k-Workshops are special scientific events for open exchange of practical and theoretical information and international networking. O2k-Workshops provide an introduction into HRR and mitochondrial physiology, complementary to training schools of the Mitochondrial Physiology Society and the COST Action MitoEAGLE 

4. **O2k-procedures.** The user-friendly O2k software DatLab supplies instrumental protocols for quality control. **Substrate-uncoupler-inhibitor titration (SUIT) protocols** guide the user step-by-step through experiments which provide **bioenergetic snapshots of mitochondrial fitness**. The flexibility of the O2k and SUIT protocols allows for any type of mitochondrial preparation to be measured: isolated mitochondria, permeabilized tissues, tissue homogenates, permeabilized cells, and intact cells. Our open information strategy is appreciated equally by beginners and experienced users, promoting a new quality in science. 



5. **World-Wide Orobos O2k-Network.** Based on its outstanding quality, the O2k has spread worldwide and is applied in internationally leading laboratories in **49 countries**. The O2k-Network lists **600 experienced labs**, open for direct contact between scientists in the expanding field of cell respiration, for immediate exchange of experience, transfer of user-innovation, and continuous optimization of Quality Control. 





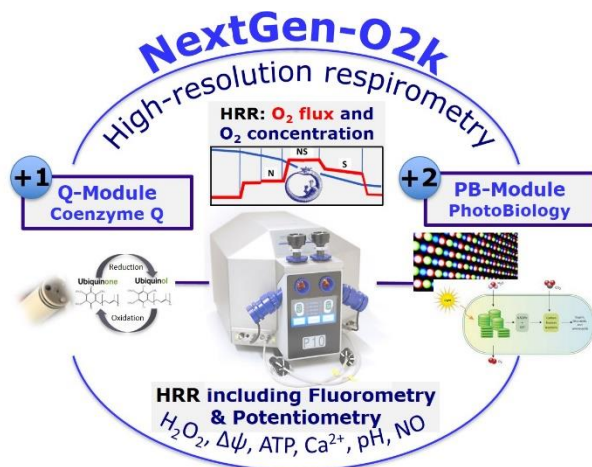
The expanding literature list contains **>3,200 O2k-Publications** and is a valuable source of references in mitochondrial respiratory physiology.



Quality management to tackle the reproducibility crisis with the O2k. Our world-wide technical support is extended to scientific advice directly by the Oroboros-Team of scientists in research and development.



By design, the O2k is most economical, with **minimum running costs**.

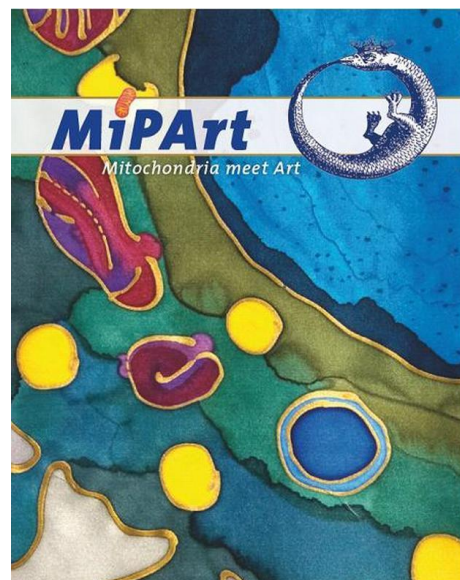


6. Innovation, continuous development and optimization - all-in-one.

Instrumental development is a continuous process advanced by Oroboros Instruments. Long-term cooperation with our partner WGT-Elektronik from the **O2k-FluoRespirometer** to the **NextGen-O2k** (current EU H2020 SME project) makes us a driving force in mitochondrial physiology.

7. No investors involved. Oroboros Instruments is entirely independent of investors. From the start, therefore, our policy has not been dictated by profit orientation, but aims at a best cost/benefit ratio. The positive feedback from our customers makes possible a sustained development and steady innovation: **Cooperation and feedback in science** – symbolized by the logo of **Oroboros**.

8. No empty advertisements. Oroboros Instruments provides and spreads high-quality information. We deliberately refrain from expensive advertising campaigns, which add no value to a product yet have to be paid by the end user. Our investment into HRR is expertise and the dedicated high-quality work of the Oroboros O2k-Team and our distribution partners. Our enthusiastic customers provide the most valuable, economic and informative advertisement for our products.



Odra Noel (London)



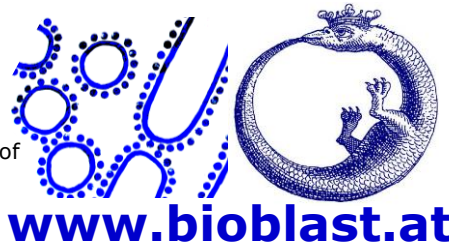
9. Cooperation and Corporate Social Responsibility.

Cooperation and CSR are integral to our corporate aims and HRR, reflected in the quality and sustainability of our products.

10. Bioblast Wiki



Integrating the spirit of Gentle Science and Scientific Social Responsibility



[MitoPedia](#): high-resolution terminology.

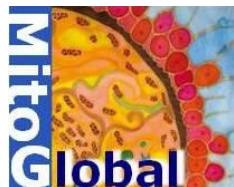


Substrate-uncoupler-inhibitor titration protocols.



[The world as a laboratory](#) – science and adventure.

The [MiPART Gallery](#) – translating mitochondrial research into messages for the public: *Mitochondria are bioblasts – the organisms in our cells* – Science and *Tempo giusto*.



[MitoGlobal](#): a world-wide platform for societies and organizations supporting mitochondrial research and medicine.



[MitoFit Preprint Archives](#) – the preprint server for mitochondrial physiology and bioenergetics.

» Gnaiger *et al* (2019) Mitochondrial respiratory states and rates. MitoFit Preprint Arch [doi:10.26124/mitofit:190001.v3](https://doi.org/10.26124/mitofit:190001.v3).



[MitoEAGLE](#): The objective of the MitoEAGLE network is to improve our knowledge on mitochondrial function in health and disease related to

Evolution, Age, Gender, Lifestyle and Environment.



Funded by the Horizon 2020 Framework Programme of the European Union