

## Top 10 reasons for Oroboros Instruments

### Oroboros-Team


#### Oroboros Instruments

O2k High-Resolution Fluorescence Respirometry  
Schöpfstr. 18, A-6020 Innsbruck, Austria  
Email: [instruments@orooboros.at](mailto:instruments@orooboros.at); [www.orooboros.at](http://www.orooboros.at)

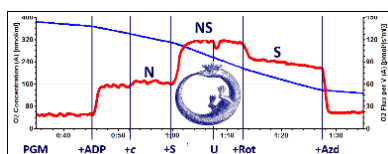
We summarize 10 compelling reasons for the Oroboros O2k and for collaborating with Oroboros Instruments. **O2k-Top10** reflects our corporate reproducibility commitment.




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

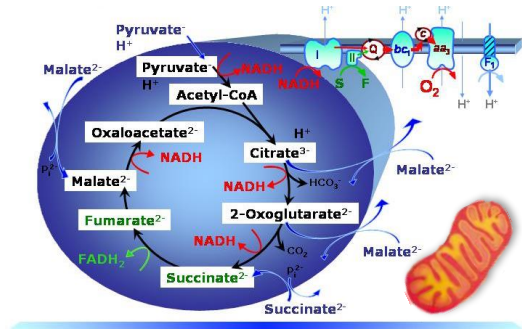
**2. Long-term experience.** Applications of >1,000 O2k worldwide transform bioenergetics to mitochondrial and cell physiology. Mitochondrial energy metabolism is studied with the O2k in **exercise physiology, aging, cancer, diabetes, neurodegeneration, oxidative stress, and mitochondrial medicine** in general. High-Resolution Fluorescence Respirometry (HRFR) combines measurement and control of oxygen concentration and respiratory oxygen flux with monitoring ROS production, mitochondrial membrane potential, ATP production, Ca<sup>2+</sup>, pH, and NO - all in one chamber. The technical O2k-specifications make it a '**sole source**' instrument. 

**3. Meet the experts** at the outstanding O2-Workshops for training in HRFR. **>135 O2k-Workshops** since 1991.



**O2k-Workshops** are special scientific events, for open exchange of practical and theoretical information, international networking, and providing an introduction into mitochondrial physiology. These are complemented by training schools of the Mitochondrial Physiology Society and the COST Action MitoEAGLE 

4. **O2k-QC 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 Oroboros O2k-Network.** Based on its outstanding quality, the O2k has spread world-wide 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 **>3,000 O2k-Publications** and is a valuable source of references in mitochondrial respiratory physiology. [📁](#)

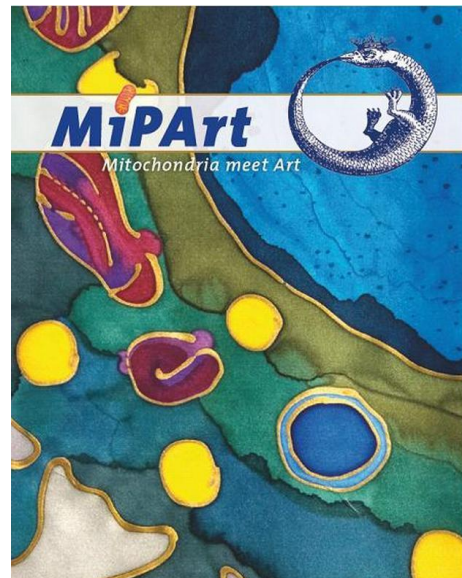
**Service in the service of science.** Our world-wide service is not limited to technical details, but includes scientific advice directly by the Oroboros-Team of scientists in research and development. By design, the O2k is most economical, with **minimum running costs.** [📁](#)




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) and scientific networks (COST Action MitoEAGLE; Marie Skłodowska-Curie ITN Actions) makes us a driving force in mitochondrial physiology. [📁](#)



**7. No investors involved.** Oroboros Instruments Corp. 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 **Oroboros**. 



**Odra Noel** (London)

**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 HRFR 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. 

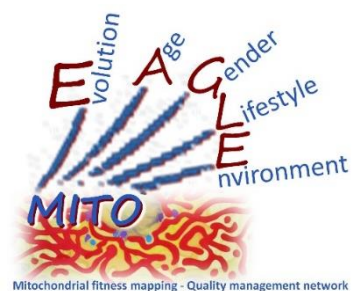
**9. Cooperation and Corporate Social Responsibility.** Cooperation and CSR are integral to our corporate aims and HRFR, reflected in the quality and sustainability of our products.

**10. Bioblast Wiki** 

- MitoPedia: High-resolution terminology
- World-wide cooperations: [MitoEAGLE](#); [MitoFit](#); [Houska Award 2012](#); [AltitudeOmics Bolivia 2012](#); [Xtreme Everest 2013](#); [Iditarod racing dogs Alaska 2014](#)
- MitoGlobal: a world-wide platform for societies and organizations supporting mitochondrial research and medicine.
- The [MiPart Gallery](#) for jointly translating mitochondrial research into messages for the general community: *Mitochondria are bioblasts – the organisms in our cells* – Science and *Tempo giusto*.
- **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



Mitochondrial fitness mapping - Quality management network

# Bioblast wiki



Integrating the spirit of  
Gentle Science and  
Scientific Social  
Responsibility

[www.bioblast.at](http://www.bioblast.at)

Oroboros-Team<sup>1</sup>



**Bioblast** was launched as a glossary and index for High-Resolution FluoRespirometry (Oroboros Instruments: **OroboPedia**) and Mitochondrial Physiology (**MitoPedia**), to find topics quickly, as a dynamic tool for summarizing definitions of terms, symbols and abbreviations - an innovative, collaborative Wiki database<sup>2,3</sup>.

**What is the aim?** Bioblast provides a platform for **Gentle Science**<sup>4</sup> in the spirit of Scientific Social Responsibility. Catalytically working as an *Information synthase* (see logo<sup>3</sup>), **MitoPedia** supports the decentralized evolution of a glossary of scientific terms, for developing a consistent nomenclature in the growing field of mitochondrial physiology. The corresponding category **Publications** provides a portal for sharing, disseminating and commenting relevant literature in mitochondrial physiology, with context-related filters for references. Bioblast allows the *evolution* of a scientific publication - providing space for open discussions and extensions of an otherwise static *paper*. This applies specifically to the sections of *Methods and Materials*, *Discussion*, and *References*. Detailed information added and edited should be helpful in practice. For example, **O2k-Procedures** are found now more quickly and users are encouraged to contribute and share their expertise.

**How to register?** Write to us, and we will register you with your real name, as in a scientific publication. Anonymous or pseudonymous contributions to Bioblast do not follow the scientific attitude of publication. Mail to [instruments@orooboros.at](mailto:instruments@orooboros.at) for registration or if you need help in editing.

**How does it work?** We invite scientists, students, and technicians in mitochondrial physiology and pathology to join as 'active users' in the spirit of Gentle Science, to ensure that the Bioblast Wiki will develop into a database of top-quality scientific information. This can be achieved only by an expert-moderated Wiki - with input and feedback of a large benevolent user community of experts in mitochondrial physiology.

All of us can shape the Bioblast Wiki by bringing together scientists working in divergent disciplines, to discuss, to resolve differences, to spread new knowledge and techniques; thus meeting the demand to integrate current developments in the methodologically and conceptually complex field of mitochondrial physiology.

1. The Oroboros O2k-Team: [http://wiki.orooboros.at/index.php/Orooboros\\_contact](http://wiki.orooboros.at/index.php/Orooboros_contact)
2. A *wiki* (Hawaiian, meaning 'fast') is a dynamic and collaborative website. Cunningham Ward: *What is a Wiki*; WikiWikiWeb: <http://www.wiki.org/wiki.cgi?WhatIsWiki>
3. The **Bioblast logo** combines mitochondrial art, from 'ATP synthase congregation' by Odra Noel, with the Oroboros, "the tail-eater" - a dragon forming a circle, where 'creation and the created become one in an inseparable process' [http://wiki.orooboros.at/index.php/Orooboros\\_logo](http://wiki.orooboros.at/index.php/Orooboros_logo)
4. Gentle Science Shapes the World - [http://www.bioblast.at/index.php/Gentle\\_Science](http://www.bioblast.at/index.php/Gentle_Science)