

# Oroboros MiR05-Kit instruction sheet

Mitochondrial Physiology Network 22.10(03):1-2 (2019)

Version 03: 2019-09-02 ©2017-2019 Oroboros

Updates: [wiki.orooboros.at/index.php/MiR05-Kit](http://wiki.orooboros.at/index.php/MiR05-Kit)



## Mitochondrial respiration medium: MiR05-Kit

Gnaiger E, Plangger I, Hunger M

**Oroboros Instruments**

Schoepfstrasse 18, A-6020 Innsbruck, Austria

Email: [instruments@orooboros.at](mailto:instruments@orooboros.at)

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

### MiR05-Kit Mitochondrial respiration medium



Product ID: 60101-01  
Lot: 19.01689  
Solid crystalline powder  
Storage at room temperature  
Expiry date: Jul 2021



Mixture not classified as hazardous  
(regulation (EC) No 1272/2008).

For a final volume of 250 mL MiR05.

More details: [wiki.orooboros.at/index.php/MiR05-Kit](http://wiki.orooboros.at/index.php/MiR05-Kit)

For use in R&D only.  
Not intended for direct use on humans or animals.

**Oroboros Instruments GmbH**  
Schoepfstrasse 18, Innsbruck, Austria  
[www.orooboros.at](http://www.orooboros.at)

## 1. Composition

### 1.1. MiR05-Kit

MiR05-Kit [1 vial]	Formula weight [g/mol]	Amount for 250 mL final volume [g]	Final concentration [mM]
EGTA	380.4	0.047	0.5
MgCl <sub>2</sub>	95.2	0.071	3
Lactobionic acid	358.3 free acid	5.375	60
Taurine	125.1	0.625	20
KH <sub>2</sub> PO <sub>4</sub>	136.1	0.340	10
HEPES	238.3	1.191	20
D-Sucrose	342.3	9.413	110

### 1.2. BSA to be added at preparation

Substance	Final conc.	Addition to 250 mL final volume [g]	Source; storage temp.	Comment
BSA, fatty acid free	1 g/l	0.25	Sigma A 6003 fraction V (25 g); 4 °C	Not provided in the MiR05- Kit

## 2. Qualified personnel

The MiR05-Kit is a carefully mixed powder of solid chemicals. The powder is not to be partitioned by the user.

The mixture is not classified as hazardous. Nevertheless, the MiR05-Kit can be hazardous to untrained persons if handled inappropriately and not in accordance with the regulations of the preparation instructions. This

instruction sheet provides precise safety indications to avoid hazards to all persons using the MiR05-Kit.

The preparation of the MiR05 medium described in this document may be performed only by personnel qualified for the specific task, such as technicians, scientists or trained students.

### 3. Preparation of a final volume of 250 mL MiR05

- Transfer the MiR05-Kit powder of one vial into a glass beaker.
- Add 230 mL H<sub>2</sub>O.
- Dissolve with magnetic stirring at 30 °C.
- Add 3.75 mL of 5 M KOH at 30 °C and stir for 90 min.
- Adjust to pH 7.1 with 5 M KOH at 30 °C using a pH electrode. Do not use pH paper. The pH adjustment may be slow (90 min). pH has to be stable for at least 5 min. Do not leave the pH electrode in the solution during the 90 min waiting time.
- Separate approx. 50 mL of this prepared solution into a glass beaker and dissolve 0.25 g BSA (essentially fatty acid free) completely.
- Add the dissolved BSA to the main solution. Check pH again and re-adjust to 7.1 at 30 °C if necessary.
- Add H<sub>2</sub>O to a final volume of 250 mL to complete the preparation of the medium.
- Partition the MiR05 medium in appropriate aliquots in plastic vials (e.g. 40 mL each) and store at -20 °C.

### 4. Storage information

- Aliquoted portions of prepared MiR05 medium can be stored at -20 °C for several months.
- Updated information on storage limitations will be provided on the website according to quality control in the Oroboros MitoFit research laboratory.
- The MiR05-Kit powder may contain gray or black specks.
- There could be a slight yellow coloring of the MiR05 medium: tests with isolated mitochondria (mouse brain) and cryopreserved HEK cells revealed no impact of the yellow coloring on respiration.

### 5. Supplementary and ordering information

» <http://wiki.orooboros.at/index.php/MiR05-Kit>

Gnaiger E, Kuznetsov AV, Schneeberger S, Seiler R, Brandacher G, Steurer W, Margreiter R (2000) Mitochondria in the cold. In: Life in the Cold (Heldmaier G, Klingenspor M, eds) Springer, Heidelberg, Berlin, New York:431-42.