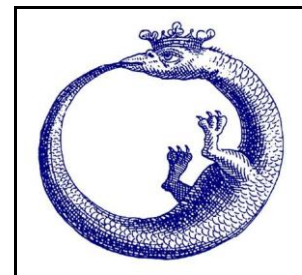


CLINICAL AND INTERDISCIPLINARY

Department of Transplant Surgery
Research Division
University Hospital of Innsbruck
Anichstrasse 35
A-6020 Innsbruck, Austria
Tel: +43 512 504 2343 (2603)
Fax: +43 512 504 2605

**METABOLIC
ENERGETICS
RESEARCH
GROUP IN
EUROPE****BIOENERGETICS****International OROBOROS Oxygraph Seminar**

COMETT - Community Action Programme in Education and Training for Technology

**HIGH-RESOLUTION RESPIROMETRY
IN CLINICAL AND PHYSIOLOGICAL BIOENERGETICS**

Department of Transplant Surgery, University of Innsbruck, Austria

Seminar: March 4-5, 1994

Special Application Course: March 6-8, 1994

Lecturers

F.N. Gellerich, Department of Transplant Surgery, Innsbruck

E. Gnaiger, Department of Transplant Surgery, Innsbruck

W.S. Kunz, Department of Biochemistry, Magdeburg

W. Ruitenbeek, Department of Pediatrics, Nijmegen

B. Saltin, Department of Physiology, Stockholm

H.R. Scholte, Department of Biochemistry, Rotterdam

W. Sperl, Department of Pediatrics, Innsbruck

Aim

Presentation of high-resolution *Oxygraph* respirometry: biopsies, permeabilized muscle fibers and cultured cells. Discussion of specific applications in respiratory research.

Areas of interest

Clinical diagnostics; cellular physiology; bioenergetics; organ and cell preservation; sports medicine.

Instrumentation

OROBOROS *Oxygraph* (ANTON PAAR KG, Graz, Austria).

Electronic Microinjection/Titration Pump (ALGE Elektronik).

Microcalorimeter Thermal Activity Monitor (ThermoMetric AB, Stockholm, Sweden).

Support

COMETT - Alpine Training Association Center, Innsbruck; ANTON PAAR KG, Graz, Austria; ALGE Elektronik, Lustenau, Austria; Austrian Science Foundation FFF and FWF.

Organization

Erich Gnaiger and Wolfgang Sperl

Collaboration: R. Steinlechner, D. Skladal, M. Wyss, T. Eberl, G. Krummschnabel, N. Lanznaster

PROGRAM

INTERNATIONAL OROBOROS *Oxygraph* Seminar

University of Innsbruck, March 4-5, 1994

Venue: Universitätsklinik Innsbruck, Anichstraße 35, A-6020 Innsbruck, Austria -
Chirurgiegebäude, Kleiner Hörsaal.

Secretariat: Tel.: +43 512 504 2343 and 2603; Fax: +43 512 504 2605

Thursday, March 3 18:00 **Welcome reception, registration**

Friday, March 4 08:30 **Registration**

09:15 **Welcome**

Raimund Margreiter

Chairman: *Wolf Endres*

09:30 **Clinical bioenergetics and mitochondrial diagnosis: introduction.**

Wolfgang Sperl

10:00 ***Oxygraph* design and function - basis for high-resolution respirometry.**

Erich Gnaiger

10:30 **Mitochondrial respiration in small samples of muscle tissue.**

Frank N. Gellerich

11:00 Coffee/tea

11:30 **Oxygraphic determination of mitochondrial defects in human mononuclear cells.**

Wolfram S. Kunz

12:30 Lunch

14:30 **OROBOROS *Oxygraph*: demonstration and introduction into practical applications.**

Calibration, instrument control and maintenance

16:30 Coffee/tea

SEMINARS IN CLINICAL AND INTERDISCIPLINARY BIOENERGETICS:

Chairman: *Frank Gellerich*

17:00 **Athletic performance and mitochondrial function.**

Bengt Saltin, Department of Physiology, University of Stockholm

18:00 **P/O ratios and efficiency in mitochondrial oxidative phosphorylation.**

Erich Gnaiger, Department of Transplant Surgery, University Hospital of Innsbruck

20:30 Dinner

Saturday, March 5

- 09:30 **OROBOROS *Oxygraph*: instrumentation for high-resolution respirometry.**
- Oxygen solubility as a function of pressure, temperature and buffers.
 - Function and maintenance of the polarographic oxygen sensor.
 - Chamber volume and sensitivity: facing the paradigm of minimum volume.
 - Oxygen consumption of the oxygen sensor and back diffusion of oxygen.
 - Sample injection: pulse injection and steady state injection.

12:30 Lunch

- 14:30 **OROBOROS *Oxygraph*: data analysis for high-resolution respirometry.**
- Linear slopes: chart recorder evaluation *versus* calculated time derivatives.
 - Data smoothing: options and pitfalls.
 - Time resolution and dynamic correction for lag.
 - Separation of maintenance and activated respiration.

16:30 Coffee/tea

SEMINARS IN CLINICAL AND INTERDISCIPLINARY BIOENERGETICS:

Chairman: *Wolfgang Sperl*

- 17:00 **A review on radiochemical methods for functional evaluation of oxidative phosphorylation.**

W. Ruitenbeek, Department of Pediatrics, Academic Hospital Sint Radboud, Nijmegen

- 18:00 **Polarography in the diagnosis of mitochondrial myopathies. A review.**

H.R. Scholte, Erasmus University, Dept. of Biochemistry, Rotterdam

20:30 Dinner

Sunday, March 6 to Tuesday, March 8: Special Application Course

Exercises with small groups, pilot experiments and advanced data analysis according to individual requests. Please, inform us by fax about your preferences of a working schedule, topic and requirement of extended hotel accommodation.

General Information

Hotel: For all registered participants, room reservations have been made at **Hotel Mozart, Müllerstraße 15** (Fax +43 512 595386; Tel +43 512 59538). Hotel Mozart (marked **M** in your map of Innsbruck) is in walking distance from the Rail Station (Hauptbahnhof), the University Clinic and the medieval center of Innsbruck.

Venue: From Hotel Mozart one block North, you reach Maximilianstraße. Continue straight West into the area of the **University Clinic** until you reach the Department of Surgery on your left (**Chirurgie**, 12 story building, marked **X**).

Weather: Early March in Innsbruck may imply alpine winter conditions or sunny weather of early spring. Winter sports in the vicinity of Innsbruck is usually at its best during this time of the year.

Participants: max. 20.

Registration: Austrian Shillings ATS 4,200.-- (approximately DM 600.--), including:

- Seminar fee
- Bed and breakfast: Hotel Mozart, single room, three nights (March 3 to 6), in walking distance from the seminar venue and medieval old town of Innsbruck.
- Lunch, dinner, coffee: two days (March 4 and 5)

The confirmation of registration and hotel reservation will be sent immediately upon receipt of the registration fee. Payment should be net of any Bank charges or other kind of commission.

Cancellation: Registration cancellations communicated in writing within January 31 will entitle to an 80% refund. No refund will be made after this date.

Changes: The organizers reserve the right to make changes on this program for technical or scientific reasons.

Deadline: Please send your registration by **January 31, 1994**.

Saturday, March 5

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20:30 Dinner

Specific Information for Members of the University of Innsbruck

Participants: Priority for this session is given to international participants. The **lectures** are free of charge for members of the University of Innsbruck, but we ask for a formal registration. Payment of the registration fee entitles for participation of the full seminar.

Registration: University of Innsbruck; Schilling 1.300.--, including:

- Seminar fee, seminar materials
- Reception
- Lunch, dinner, coffee: two days (March 4 and 5)

Changes: The organizers reserve the right to make changes on this program for technical or scientific reasons.

Deadline: Please send your registration by **January 31, 1994**.