



Polish Children's Fund Visit at the Nencki Institute of Experimental Biology 4-8.03.2013

Coordinator dr hab. Anna Wasik phone no 58 92 227

4.03.2013 Nencki Institute presentation for 35 people

Wykłady

Godz. 9.00-10.30

prof. U. Sławińska *The history and achievements of the Nencki Institute*

mgr J. Chilczuk *Viral vectors as tools used in gene therapy*

Visits to selected laboratories (3 groups)

10.45-11.30

group 1 Lab. of Molecular Neurobiology; prof. L. Kaczmarek

group 2 Lab. of Cell Signaling and Metabolic Disorders; prof. A. Dobrzyń

group 3 Lab. of Bioenergetics and Biomembranes; dr hab. Mariusz Więckowski

11.30-12.15

group 1 Lab. of Bioenergetics and Biomembranes; dr hab. Mariusz Więckowski

group 2 Lab. of Molecular Neurobiology; prof. L. Kaczmarek

group 3 Lab. of Cell Signaling and Metabolic Disorders; prof. A. Dobrzyń

12.15-13.00

group 1 Lab. of Cell Signaling and Metabolic Disorders; prof. A. Dobrzyń

group 2 Lab. of Bioenergetics and Biomembranes; dr hab. Mariusz Więckowski

group 3 Lab. of Molecular Neurobiology; prof. L. Kaczmarek

Lunch

14.00-14.45

group 1 Lab. of Biochemistry of Lipids; prof. Sławomir Pięka

group 2 Lab. of Neurobiology of Development and Evolution; prof. K. Turlejski

group 3 Lab. of Molecular Bases of Aging; prof. E. Sikora and Lab. of Cytometry; dr Katarzyna Piwocka

14.45-15.30

group 1 Lab. of Molecular Bases of Aging; prof. E. Sikora and Lab. of Cytometry; dr Katarzyna Piwocka

group 2 Lab. of Biochemistry of Lipids; prof. Sławomir Pięka

group 3 Lab. of Neurobiology of Development and Evolution; prof. K. Turlejski

15.30-16.15

- group 1 Lab. of Neurobiology of Development and Evolution; prof. K. Turlejski
group 2 Lab. of Molecular Bases of Aging; prof. E. Sikora and Lab. of Cytometry; dr
 Katarzyna Piwocka
group 3 Lab. of Biochemistry of Lipids; prof. Sławomir Piłka

TWO TYPES OF WORKSHOPS, EACH FOR 3 PEOPLE

BEHAVIORAL WORKSHOPS

BEHAVIOURAL STUDIES OF MEMORY AND COGNITIVE PROCESSES

LABORATORY OF NEUROPSYCHOLOGY

Head: prof. E. Szeląg

Workshop tutors: Prof. Małgorzata Węsierska, Weronika Duda, Joanna M. Sadowska

Workshop for 3 people

5.03.2012 (Tuesday) 9.00-17.00

The purpose of this course is to present researches of different kinds of memory, attention processes and executive function using diverse variants of Place Avoidance Method. This method will be presented as video presentations and as the Place Avoidance set-up.

The place avoidance test in a modified variant will be presented as a useful tool to study schizophrenia-like symptoms in the animal model. The role of brain structures will be discussed on the example of selected areas of brain damage. To this end, the histological procedure will be presented to listeners.

STAINING OF FIXED BRAIN SECTIONS SHOWING MYELINISED FIBERS.
LABORATORY OF NEUROBIOLOGY OF DEVELOPMENT AND EVOLUTION

Head: prof. Krzysztof Turlejski

Workshop tutors: Dr Ruzanna Djavadian, Natalia Chłodzińska, Agata Aniszewska

Workshop for 3 people

6.03.2013 (Wednesday) 9.00-16.00

1. Presentation of Nissl-stained preparations of the brains of several mammalian species.
2. Cutting of coronal, horizontal and sagittal sections of the fixed mouse brain on cryostat
3. Staining of the cut sections with the Gallyas stain.
4. Evaluation of the stained sections under microscope.

Participants of the workshop will be allowed to take home the preparations they performed.

PRACOWNIA NEUROPSYCHOLOGII.

Kierownik: prof. E. Szelaǳ

Brain research methods: electroencephalography

Laboratory of Neuropsychology

Head: prof. Elżbieta Szelaǳ

Workshop tutors: Anna Dacewicz, Kamila Nowak, Anna Oroń, Aneta Szymaszek

Number of participants: 5 people

The purpose of the workshop is to present an EEG method, particularly Event Related Potentials (ERPs) approach. The workshop will be divided in two sections: theoretical and practical. Technical details of the EEG equipment will be presented as well as the information about application of EEG/ ERP methods will be provided.

In the second part of the workshop participants may take part in an EEG experiment and then they will study how to analyze EEG data obtained during the workshop.

BIOCHEMICAL WORKSHOPS

HOW TO SEE SINGLE PROTEIN MOLECULE AT WORK: RECORDING ACTIVITY OF MECHANOSENSITIVE CHANNELS FROM BACTERIA.

LABORATORY OF PHYSIOLOGY OF CELL MOVEMENTS

Head – prof. Stanisław Fabczak

Workshop tutor: dr Piotr Koprowski

Workshop for 3 people

5.03.2012 (Tuesday) 9.00-16.00

We will start with a mini-lecture during which the subject of electrophysiology, ion and mechanosensitive channels will be presented. The patch-clamp equipment will be presented in the next experimental part during which the activity of mechanosensitive channels will be recorded. The participants will have a hands on experience with bacteria micromanipulation and recording by their own.

HOW TO SHOW PROTEINS IN MINERALIZING CELL?

LABORATORY OF BIOCHEMISTRY OF LIPIDS

Head - Prof. Sławomir Pikula

Workshop tutors: Agnieszka Strzelecka-Kiliszek PhD, Lukasz Bozycki MD, Norbert Olenderek

Workshop for 3 people

06.03.2012 (Wed) 9.00-16.00

The main task of the workshop is to analyze the protein profile in mineralizing human osteoblastic hFOB1.19 and osteosarcoma Saos-2 cells, which are able to mineralize producing extracellular matrix vesicles. Cell cultures will be performed in control and stimulating for mineralization conditions (in the presence of ascorbic acid and beta-glycerophosphate). Cells will be observed under inverted microscope. Then, the cells will be centrifuged to isolate matrix vesicles. Preparates will be separated electrophoretically on polyacrylamide gels to show proteins in mineralizing cells. As a next step preparates will be transferred on nitrocellulose membranes and visualized by chemiluminescence method using specific antibodies against markers of mineralization such as annexins and fetuin-A.

MITOCHONDRIAL RESPIRATORY CHAIN COMPLEXES AND ATP SYNTHASE

LABORATORY OF BIOENERGETICS AND BIOMEMBRANES

Head - prof. Jerzy Duszyński

Instructors: prof. Joanna Szczepanowska, Aleksandra Wojtala MSc, Małgorzata Bejtka MSc, Małgorzata Partyka MSc, Jarosław Walczak MSc

Classes for 3 people

7.03.2013 (Thursday) 9.00-16.00

The action of mitochondrial respiratory chain complexes and mitochondrial ATP synthase. Mitochondrial diseases. Identification of proteins of the mitochondrial respiratory chain complexes – Western Blot method. Study of mitochondrial mass in Laser Scanning Cytometry

COMMON WORKSHOP

CONFOCAL MICROSCOPY: IMAGING TECHNIQUES AND COMPUTER DATA ANALYSIS

LABORATORY OF CONFOCAL MICROSCOPY

Head: prof. Wanda Kłopocka

Workshop tutors: dr Wojciech Brutkowiak, mgr Jarosław Korczyński, mgr Artur Wolny

Workshop for 6 people

8.03.2012 (Friday) 9.00-13.00

Participants will be familiarized with the basics of fluorescence microscopy placed in our Laboratory as well as with methods of samples preparation for this kind of microscopes. Participants can individually, using our confocal microscopes and fixed specimens, adjust settings of the microscope and acquire images from the region of interest. At the end participants become acquainted with the newest software for microscope data analysis and they can carry out digital processing of captured images.

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