

CoPGr CURRICULAR CHAMBER SUBJECTS PRESENTATION FORM

SUBJECT'S ACRONYM: **RNP5762**

SUBJECT'S NAME: Advanced Topics in Neurology - Mitochondrial Diseases

CURRICULUM/AREA: Neurology/17140

FOCAL AREA: Neurology

INITIAL VALIDITY (Year/Semester):

N. OF CREDITS: 02

Theoretical Classes: 15 Practical Classes, Seminars and Others: 07 Hours of Study: 08
DURATION IN WEEKS: 01

PROFESSOR(S) IN CHARGE:

USP Professor, n. 184041 – Claudia Ferreira da Rosa Sobreira

ACTUAL COSTS OF THE SUBJECT: BRL

(Presenting, if applicable, the budget foreseen for the year, as an attachment)

PROGRAM

OBJECTIVES:

- discussing the physiopathological mechanisms of mitochondrial diseases;
- deepening the knowledge on the study techniques of the biochemical and molecular alterations of the mitochondrial diseases;
- analyzing the experimental models developed for the study of mitochondrial diseases.

JUSTIFICATION:

From the 80's, there was a growing advance on the knowledge of the mitochondrial diseases and their physiopathological bases. Particularly, the study of the mitochondrial DNA allowed the elucidation of aspects of the mitochondrial biogenesis not known. In the last years, the association of nuclear genes (codified by the nuclear DNA) with diseases caused due to mitochondrial disorder and, in some cases, related to secondary alterations of the mitochondrial DNA, opened new frontiers for the knowledge of the organelle's functions. The deep study of the physiopathology of mitochondrial diseases is not only important to the establishment of the diagnosis and determination of the action to be taken, but also contributes to the elucidation of unknown aspects of the mitochondrial biogenesis. Additionally, the study of the mitochondrial genetics and the experimental models of the mitochondrial disease are crucial for the development of new forms of treatment, like, for example, the gene therapy. The opportunity of discussing physiopathological mechanisms and molecular alterations in the mitochondrial diseases, as well as the experimental models developed for the study of the same with graduation students, physicians and non-physicians, can call the attention of the same to the development of researches which may contribute adding more knowledge to what is already known.

CONTENT (SYLLABUS):

1st day - Introduction

MORNING

Course presentation- Cláudia FR Sobreira

Seminars Distribution- Cláudia FR Sobreira

Theoretical Classes - Panelists
Mitochondria and its functions - Cláudia FR Sobreira
The importance of Coenzyme Q10 –

AFTERNOON
Theoretical Classes- Panelists
Mitochondrial DNA -
Mitochondria and Apoptosis -
Study

2nd day - Investigation Methods

MORNING
Theoretical Classes - Panelists
Biochemical Studies of the Respiratory Chain - Sílvia HA Escarso
Studies in Isolated Muscle Fibers-

AFTERNOON
Theoretical Classes - Panelists
NMR and Spectroscopy - Antônio Carlos dos Santos
Mutant Genes Identification-
Study

3rd day – Experimental Models

MORNING
Seminar - Orientation
Mitochondria and Mitochondrial DNA - Cláudia FR Sobreira
Study

AFTERNOON
Theoretical Classes - Panelists
Experimental Models in Mitochondrial Diseases
MNGIE Experimental Model -
Use of Cells Cultivation in the Study of Mitochondrial Diseases - Cláudia FR Sobreira

4th day – Genetics of Mitochondrial Diseases

MORNING
Seminar - Orientation
Experimental Models of the Mitochondrial Diseases - Cláudia FR Sobreira

AFTERNOON
Theoretical Classes - Panelists
PEO – Nuclear and Mitochondrial DNA - Cláudia FR Sobreira
MNGIE – Mitochondrial Neurogastrointestinal Encephalopathy -
Study

5th day – Genetics of Mitochondrial Diseases

MORNING
Seminar - Orientation
Mitochondrial Diseases- Cláudia FR Sobreira
Theoretical Classes - Panelists
Deficiency of Coenzyme Q10 -
Mitochondrial Myopathy with Intolerance to Exercise - Cláudia FR Sobreira
Closing

EVALUATION METHOD:

Presence weighs 2
Participation in seminars weighs 4
Reports of theoretical classes weigh 4

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