
Testi del Syllabus

Resp. Did.	LEANZA GIAMPIERO	Matricola: 007329
Docenti	LEANZA GIAMPIERO, 3 CFU LEGNAME GIUSEPPE, 3 CFU MORETTI RITA, 3 CFU	
Anno offerta:	2017/2018	
Insegnamento:	897SM - NEUROLOGIA	
Corso di studio:	SM54 - NEUROSCIENZE	
Anno regolamento:	2017	
CFU:	9	
Settore:	BIO/09	
Tipo Attività:	B - Caratterizzante	
Anno corso:	1	
Periodo:	Annualità Singola	
Sede:	TRIESTE	



Testi in italiano

Lingua insegnamento

English

Contenuti (Dipl.Sup.)

The Neuropathology course combines core teaching of fundamental aspects of major neuropathological diseases, with emphasis on the cellular and molecular causes of neurodegeneration and their clinical presentation. The course will also address how hypotheses can be tested in relevant model systems and utilised to develop novel therapeutic strategies.

The course contents will be organized as follows:

Modeling Neuropathology (prof. G. Leanza): Plastic responses of brain tissue to injury and disease; Anatomical and functional CNS plasticity: models and analyses; Neural dysfunctions, possible restorative approaches; Neuroprotection, concept and models; Neural transplantation: concept, models and technical procedures; Neurogenesis in the adult CNS: concept, models, evidences, functional implications and possible clinical use; Neural stem cells: sources, handling and potential for brain repair; Parkinson's disease: models and experimental therapeutic approaches; Alzheimer's disease: models and experimental therapeutic approaches

Molecular Neuropathology (prof. G. Legname): Molecular events in neurodegeneration; Prion diseases; Prion-like events in major neurodegenerative diseases; Proteinopathies; Protein changes in physiological and pathological conditions: Prion protein, alpha-synuclein and Lewy bodies, TDP-43, Beta-amyloid, Tau protein; Alzheimer's Disease; Parkinson's Disease; Creutzfeldt-Jakob Disease, Multiple Sclerosis; Bovine Spongiform Encephalopathy; Drug screening

Clinical Neuropathology (prof. R. Moretti): Alzheimer's Disease: clinical presentation and diagnostic criteria; neuronal loss, amyloid cascade hypothesis, tau hyperphosphorylation, APOE4, altered glutamate, calcium theory; neuroinflammation; genetic hypotheses; vascular and subcortical dementias; Movement disorders, Parkinson's disease: clinical presentation and diagnostic criteria; dopaminergic pathways; dopamine

depletion: pathological and therapeutic implications; Reward mechanisms: neural circuits and neurotransmitters involved; Addiction mechanisms: neural circuits and neurotransmitters involved; Sleep and sleep disorders, dream theory; ARAS system: mono- and polysynaptic pathways; Down Syndrome; Williams Syndrome; Brain death; Cerebral metabolism

Testi di riferimento

Kandel E.R et al., Principles of Neural Science, 5th Edition McGraw Hill Medical. Scientific articles and reviews on specific topics will also be provided during classes

Obiettivi formativi

The course seeks to provide the basic tools for the understanding of the physiopathological, symptomatological, diagnostic and therapeutic aspects of some of the most important neurodegenerative diseases, and their modeling in animals. The feasibility of these models and the potential for translating the arising experimental data into sound clinical practice, will be addressed.

The students will therefore be able to associate the neural pathology recapitulated by each model to the most suitable/updated strategies for its diagnosis or therapy.

Prerequisiti

Basic knowledge in subjects such as chemistry, biochemistry, anatomy and physiology is required

Metodi didattici

Lectures

Modalità di verifica dell'apprendimento

Students will undergo a final oral examination (mandatory), where the various issues covered in the course will be addressed and discussed. The exam may also entail the critical presentation of a scientific paper (in the form of a Journal Club) chosen by the candidate

Programma esteso

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Testi in inglese

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