### Testi in italiano

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#### Contenuti (Dipl.Sup.)

The course is composed of three parts:

**PART 1 (Prof. Annalisa Marcuzzi): NEUROANATOMY**

**PART 2 (Prof. Chiara Florio): NEUROPHARMACOLOGY**

**THE AUTONOMIC NERVOUS SYSTEM:** Anatomical and functional aspects. Cholinergic transmission: nicotinic and muscarinic receptors, classification and pharmacological features. Adrenergic transmission: receptor classification and pharmacological features.

**DRUGS OF THE CENTRAL NERVOUS SYSTEM:**
classification and distribution. The pain pathways. Molecular mechanisms of tolerance, abuse and dependence

ANTIDEPRESSANT DRUGS: ethiopathogenesis of depression. The monoaminergic, neuroendocrine and neurotrophic theories. Antidepressant drugs classifications and mechanisms of action


ANTI-EPILEPTIC DRUGS: ethiopathogenesis of epilepsy. Antiepileptic drugs: classification and mechanisms of action

PART 3 (Prof. Gabriele Stocco): PHARMACOGENOMICS

Elements of human genetic variation - basis on genetic variants affecting protein function and epigenetic effects of pharmacological relevance

Testi di riferimento

Part 1: Computer-aided teaching material will be supplied


Obiettivi formativi

The aim of the part 1 is to provide students with a basic understanding of the structural organization of the human central nervous system in sufficient depth to form the basis for further clinical or research studies of the nervous system.

The purpose of the parts 2 and 3 is to provide robust basis of Neuropharmacology, discussing the principles at the basis of the pharmacokinetic, pharmacodynamics and pharmacogenomics properties of drugs, particularly of those acting at the peripheral and central nervous system

1) Knowledge and understanding: at the end of the course, the students should have acquired the basic notions for the comprehension of the pharmacokinetic and pharmacodynamics properties of drugs and of their mechanism of action, with particular reference to drugs acting at the central nervous system.

2) Applying knowledge and understanding: at the end of the course, the students should be able to use the knowledges acquired (see point 1) for a proper use of drugs in experimental set-ups (in vivo as well as in vitro) as tools to validate hypothesis regarding the involvement of endogenous neurotransmitters in controlling physio-pathological conditions

3) Making judgements: at the end of the course, the students should be able to apply their pharmacokinetic and pharmacodynamics knowledges for a critical consideration of experimental results aimed at investigating the involvement of signaling molecules in physiological and pathological processes

4) Communication skills: at the end of the course, the students should be able to discuss clearly and with appropriate scientific terms pharmacological concepts

5) Learning skills: at the end of the course, the students should have a well-build background that should enable them to continue to enlarge autonomously and critically their knowledges about the pharmacokinetic and pharmacodynamics properties of drugs

Prerequisiti

Part 1: Knowledge of the fundamentals of cytology, biology, histology.

Parts 2 and 3: Knowledge of principles of synaptic transmission and of mechanisms of intracellular signaling transduction pathways

Metodi didattici

Part 1: frontal lectures

Parts 2 and 3: Computer-aided frontal lectures (slides with images and short texts reassuming the essential aspects of the lessons)

Altre informazioni

Part 1: Computer-aided teaching material will be supplied

Part 2 and 3: Students are provided by the slides used during the frontal lessons thought Moodle. For further information, students are invited to contact dott. Florio by mail (florioc@units.it) using their institutional E-mail address

Modalità di verifica dell'apprendimento

Part 1: Students are required to take a final oral examination.

Parts 2 and 3: At the end of the course, students are required to take a final oral examination of 20-40 min consisting on three different topics covering the course program (1. Basic Pharmacology (pharmacokinetic
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DRUGS OF THE CENTRAL NERVOUS SYSTEM:

ANTIDEPRESSANT DRUGS: ethiopathogenesis of depression. The monoaminergic, neuroendocrine and neurotrophic theories. Antidepressant drugs classifications and mechanisms of action

ANTIPSYCHOTIC DRUGS: ethiopathogenesis of psychosis. The dopaminergic and neurodevelopmental theories. Typical and atypical antipsychotic drugs and mechanisms of action.


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3) Making judgements: at the end of the course, the students should be able to apply their pharmacokinetic and pharmacodynamics knowledges for a critical consideration of experimental results aimed at investigating the involvement of signaling molecules in physiological and pathological processes.
4) Communication skills: at the end of the course, the students should be able to discuss clearly and with appropriate scientific terms pharmacological concepts.

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Part 1: Knowledge of the fundamentals of cytology, biology, histology. Parts 2 and 3: Knowledge of principles of synaptic transmission and of mechanisms of intracellular signaling transduction pathways.

Part 1: frontal lectures
Parts 2 and 3: Computer-aided frontal lectures (slides with images and short texts reassuming the essential aspects of the lessons).

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Part 1: Students are required to take a final oral examination. Parts 2 and 3: At the end of the course, students are required to take a final oral examination of 20-40 min consisting on three different topics covering the course program (1. Basic Pharmacology (pharmacokinetic and pharmacodynamics) or Autonomous nervous system, 2. Pharmacogenomics and 3. Drugs acting at the Central Nervous System). The student should demonstrate to be able to link together different topics of the program and to communicate the acquired knowledges in a precise and efficacious manner. The mark/30 must be equal or higher than 18.

The final mark/30 is the arithmetic mean of Part 1 (Neuroanatomy) and Parts 2-3 (Neuropharmacology and Pharmacogenomics).

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