UCL Université catholique de Louvain

LBIO1232

2016-2017

Physiologie et histologie animales

4.0 credits	40.0 h + 20.0 h	1 + 2q

Teacher(s) :	Knoops Bernard ; Dumont Patrick ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	BIO1232A 1. Epitheliums: characteristics and general properties of the epithelial cell. Epithelial differentiation and structure-function relations. Epitheliums and their regional differentiation (tegument, respiratory tract, intestine). Glands and their secretion functions (exocrine glands: salivary glands, liver, pancreas). 2. Connective tissues: description of the extracellular matrix components and of the cellular microenvironment. Differentiation and origin of connective tissues. The adipose tissue. Cartilage and bone tissue, the chondro- and ostoeogenesis. 3. Hematopoietic tissues and the blood: formation, differentiation, origin of blood cells; structure and function of blood cells; introduction to immune reaction. 4. Muscle tissue: smooth muscle, skeletal muscle and cardiac muscle; cellular aspects of contraction and regulation mechanisms. 5. The nervous tissue: the neuron, synapse and neuronal network; transport of information, glial cells and their function in protecting and cooperating with neurons. BIO1232B Electric and chemical synapses; slow and fast synapses; transduction mechanisms; post-synaptic potential; inversion potential; nervous integration; smooth, skeletal and cardiac muscles; molecular aspects of the contractile mechanism; regulation of contractions strength; cardiac cells regulation.
Aims :	BIO1232A The goal of this formation is to establish the morphological and functional bases in histology of the main animal tissues with emphasis on mammalian tissues. Some aspects in cell biology are also examined to integrate morphological, physiological and biochemical features of tissues or specialized cells. After this formation, students must be able to identify and describe tissues during observation of histological preparations or examination of electon microscopy pictures. Students : VETE12BA, BIOL12BA, CHIM12BA (mineure en biologie) BIO1232B The goal of this formation is to analyse the physiology of nervous synapses and muscle cells. A special emphasis is set on the experimentations that led to the understanding of neuronal and muscular cells. The student is invited to analyse experimental data and conceive an experimental plan. Students : compulsory for BIOL12BA, CHIM12BA (mineure en biologie) *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled “Programmes/courses offering this Teaching Unit”.*
Content :	BIO1232A Functional histology of mammalian tissues including epitheliums, glands, connective tissues, adipose tissue, cartilage, bone tissue, hematopoietic tissues, blood, smooth muscle, skeletal muscle, cardiac muscle, peripheral nervous system and central nervous system. Also, examination of tissues from different organs will be carried out during assisted works. BIO1232B Lectures will provide information on the physiology of neurons and contractile cells through the analysis of experimental set-ups and data that allowed to understand the physiology of these cells.

Other infos :	BIO1232A Prerequisite : Knowledge in cell and animal biology (Bac1). Evaluation : theorical and practical examination. Support : powerpoint with the theory available on i-Campus. Atlas of functional histology. Atlases and histology books are available at the library. BIO1232B Prerequisite : Knowledge in cell excitability (Biophysics BIO1261, Bac2). Evaluation : theoretical examination. Support : powerpoint with the theory available on i-Campus. Reference textbooks are available at the University library.
Faculty or entity in charge:	BIOL