UCL Université catholique de Louvain

WSBIM2181

2014-2015

Aspects moléculaires et cellulaires de la nutrition

4.0 credits	30.0 h	1q

Teacher(s) :	Cani Patrice (coordinator) ; Bertrand Luc ; Lanthier Nicolas ; Veiga da Cunha Maria ; Horman Sandrine ;
Language :	Français
Place of the course	Bruxelles Woluwe
Prerequisites :	Bachelor in Biomedical Sciences or Pharmaceutical Sciences, Bachelor in Bioengineering
Main themes :	This course aims to study the mechanisms involved in the regulation of cellular activity and metabolism. Different membrane and nuclear receptors as well as transcription factors directly regulated by nutrients and/or their metabolites will be investigated (e.g. : PPAR's, FXR, chREBP, GRP40/120/119/41/43, Toll like receptors (TLR's)). We will also study the mechanisms regulating specific signaling pathways involved in energy homeostasis, lipid and glucose metabolism (e.g., insulin, AMPK, mTOR, ROS).
Aims :	At the end of this course, the students will be able : (1) to understand and to explain the cellular and molecular mechanisms influenced by nutrients (e.g.: different type of lipids, proteins and amino acids, specific carbohydrates) and their cellular metabolites (e.g.: ceramides, DAG, endocannabinoids, ...), (2) to describe the mechanisms regulating gene expression directly connected with energy, glucose and lipid metabolism, (3) to understand the key features regulating physiology and metabolism and that may be involved in the onset of specific pathological disorders such as obesity, type 2 diabetes, metabolic inflammation, cardiovascular diseases, pancreatic and hepatic diseases. *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".*
Evaluation methods :	Written exam on all parts of the course. The student should provide criticism and integrate the different themes addressed during the course
Teaching methods :	The team of teacher is composed of professors that have a specific knowledge and complementary expertise in molecular and cellular aspects. Each member of the team will teach themes that are in his field of expertise and for some of them directly developed in their research practice. It is worth noting that this will be coordinated between the different members of the teaching team in order to integrate as much as possible all the different aspects of the course. Finally, this approach will help to maintain the content of the course relatively up to date in this fast moving field.
Cycle and year of study :	> Master [120] in Biomedicine
Faculty or entity in charge:	FASB