


Due to the COVID-19 crisis, the information below is subject to change, in particular that concerning the teaching mode (presential, distance or in a comodal or hybrid format).

3 credits	30.0 h	Q1
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Teacher(s)	Constantinescu Stefan ;Decottignies Anabelle ;Feron Olivier ;Lemaigre Frédéric (coordinator) ;Sonveaux Pierre ;
Language :	French
Place of the course	Bruxelles Woluwe
Main themes	The course describes the molecular and cell biology of intercellular signaling in normal condition and cancer, the mode of action of anti-cancer drugs, the interaction between tumor cells and their micro-environment, angiogenesis and metabolic anomalies resulting from the adaptation of tumor cells to their micro-environment (hypoxia and acidosis). The course will also address the issue of tumor cell immortality.
Aims	<p>The course is expected to provide the students with the competence to:</p> <ul style="list-style-type: none"> - master the main intercellular signaling pathways, the interactions between tumor cells and blood vessels, the principles of cell immortality and the determinants of tumor cell metabolism; - understand and explain how perturbed intercellular signaling, abnormal metabolism and cell immortality contribute to to tumor initiation and progression, and metastasis; - understand and explain how anti-cancer drug modulate intercellular signaling; - be able to design an experimental approach aiming at the identification of therapeutic targets; - be able to critically address an oral presentation or article in the field; - use the acquired knowledge to address knew issues. <p>-----</p> <p><i>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".</i></p>
Evaluation methods	<p>Due to the COVID-19 crisis, the information in this section is particularly likely to change.</p> <p>Written exam, on site, with open questions evaluating the student's knowledge and the student's ability to implement the knowledge to solve a biological problem.</p> <p>The final mark of the exam results from the global evaluation of the exam, not from the mathematical sum of points obtained at individual questions.</p>
Teaching methods	<p>Due to the COVID-19 crisis, the information in this section is particularly likely to change.</p> <p>Lectures, on site or remote.</p>
Content	<p>The course describes the molecular and cell biology of intercellular signaling in normal condition and cancer, the mode of action of anti-cancer drugs, the interaction between tumor cells and their environment, angiogenesis and metabolic anomalies resulting from the adaptation of tumor cells to their micro-environment (hypoxia and acidosis). The course also addresses the issue of tumor cell immortality.</p> <p>At the end of the course, the students are expected to master the main intercellular signaling pathways, the interactions between tumor cells and blood vessels, the principles of cell immortality and the determinants of tumor cell metabolism; to understand and explain how perturbed intercellular signaling, abnormal metabolism and cell immortality contribute to tumor progression and metastasis; to understand and explain how anticancer drug modulate intercellular signaling; to be able to design an experimental approach aiming at the identification of therapeutic targets; to use the acquired knowledge to address new issues.</p>
Inline resources	Slides presented during courses and teaching notes are made available on http://moodleucl.uclouvain.be/
Bibliography	The biology of Cancer, R.A. Weinberg, Garland Publishing
Other infos	Prerequisite: fundamental principles in cell and molecular biology, and biochemistry (metabolism) taught during the baccalaureate.

Faculty or entity in charge	FASB
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Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Biomedicine	SBIM2M	3		
Master [60] in Biomedicine	SBIM2M1	3		