

3.00 credits

22.5 h

Q2

Teacher(s)	Frédéric Raphaël ;Lambert Didier ;Muccioli Giulio (coordinator) ;
Language :	French > English-friendly
Place of the course	Bruxelles Woluwe
Main themes	The teacher(s) will discuss first the different techniques allowing the discovery of novel therapeutic targets (lipidomic ' proteomic ' deorphanization), second the methods allowing the identification of hits for a given molecular target (high-throughput screening ; computer assisted de novo drug design); finally the strategies allowing to optimize a hit ('hit to lead') will be discussed (structures-activity relationships ; docking; )
Learning outcomes	<p><b>At the end of this learning unit, the student is able to :</b></p> <p>At the end of the activity the student will be able to</p> <ul style="list-style-type: none"> <li>• Interpret, based on what was discussed in class, the results presented in a scientific paper dealing with the development of a novel drug</li> <li>• Suggest a strategy allowing to identify novel therapeutic targets</li> <li>• Suggest a strategy allowing to identify novel lead compounds for a given target (enzyme, receptor, ')</li> <li>• Suggest a strategy allowing to optimize the activity of a drug towards its target</li> </ul>
Evaluation methods	Oral presentation of a work prepared by the student followed by questions from the teachers
Teaching methods	<p>Students will be asked to propose a research "topic" to the teachers. After "validation" of the topic, students will have the opportunity to work on their topic with the support of the teachers.</p> <p>Scientific journals such as Nat. Rev. Drug Discov, J. Med. Chem, Cell Chem. Biol. are excellent sources of inspiration (among others).</p> <p>As an example, some elements to initiate the reflection could be</p> <ul style="list-style-type: none"> <li>• Choice of the target           <ul style="list-style-type: none"> <li>• What would be its interest in a pathological situation?</li> <li>• What is already known about this target?</li> <li>• What else can be done/developed on this target and why?</li> <li>• Description of the target (to help understand the rest of your project)</li> <li>• Type of target ? (GPCR, enzyme, nuclear receptor, channel receptor, ...)</li> <li>• Structure or 3D model available?</li> <li>• Pharmacological tools available? (e.g. radioligand, labelled substrate, ...)</li> </ul> </li> <li>• How would you do it ?           <ul style="list-style-type: none"> <li>• Hit identification (Screening? Use of a 3D model? ...)</li> <li>• Hit to lead (pharmaco test ? use of 3D models ?...)</li> <li>• In vivo validation?</li> </ul> </li> </ul>
Content	<ul style="list-style-type: none"> <li>• This course aims to allow students interested in drug design and medicinal chemistry to go further in their knowledge by proposing a "role play".</li> </ul> <p>The objective will be to propose a "research project" (in the form of a powerpoint presentation) illustrating one or more aspects of medicinal chemistry/drug discovery.</p> <p>This is an excellent complement to more general courses such as WFARM1302 and WFARM2118.</p>
Faculty or entity in charge	FARM

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Pharmacy	FARM2M	3		