

## Human and Animal Biotechnology (I002613)

**Wegens Covid19 kan mogelijk afgeweken worden van de onderwijs- en evaluatievormen. Dergelijke afwijkingen zullen via Ufora worden gecommuniceerd.**

<b>Cursusomvang</b>	<i>(nominale waarden; effectieve waarden kunnen verschillen per opleiding)</i>		
Studiepunten 5.0	Studietijd 150 u	Contacturen	50.0 u
<b>Aanbodsessies in academiejaar 2022-2023</b>			
A (semester 2)	Engels	Gent	

### Lesgevers in academiejaar 2022-2023

Vanrompay, Daisy LA22 Verantwoordelijk lesgever

### Aangeboden in onderstaande opleidingen in 2022-2023

	stptn	aanbodsessie
<a href="#">Master of Science in Bioscience Engineering: Cell and Gene Biotechnology</a>	5	A
<a href="#">Uitwisselingsprogramma bio-ingenieurswetenschappen: cel- en genbiotechnologie (niveau master-na-bachelor)</a>	5	A

### Onderwijstalen

Engels

### Trefwoorden

1 Cell and tissue engineering, 3D culturing, gene transfection and expression in eukaryotic cells, biotechnology and genetic engineering in new drug and therapy development, gene therapy, vaccinology

### Situering

Human and Animal Biotechnology

### Inhoud

1) general aspects of cell and tissue engineering, 2) 3D culturing, organoids, 3) embryology and stem cells, 4) gene transfer and expression in eukaryotic cells, 5) production of classic and recombinant vaccines, including DNA and mRNA vaccines, 6) nanobody engineering, 7) gene therapy, 8) recombinant drugs and their registration

### Begincompetenties

General knowledge on cell biology, microbiology and gene technology

### Eindcompetenties

1. The student possesses a broad knowledge, at an advanced level in a number of basic disciplines in relation to biomedical applications
2. The student gains the necessary skills for the manipulation of human and animal cells and their tissues
3. The student gains the necessary skills for gene expression in eukaryotic cells
4. The student can design and implement strategies for the development of recombinant drugs and their applications
5. The student is able to assess new scientific developments in genetic engineering and their applications in a scientific and socio-economic context
6. The student is aware of ethical and confidentiality aspects of some human and animal biotechnology applications

### Creditcontractvoorwaarde

Toelating tot dit opleidingsonderdeel via creditcontract is mogelijk mits gunstige beoordeling van de competenties

## Examencontractvoorwaarde

Dit opleidingsonderdeel kan niet via examencontract gevolgd worden

## Didactische werkvormen

Demonstratie, hoorcollege, practicum

## Toelichtingen bij de didactische werkvormen

Theory: lecture using power point presentations which will be made available via the electronic learning platform and also movies on the topic. Practical: biotechnological engineering techniques focused on the contents of the course and to be performed by the student in the laboratory. Master's dissertation: possibility to prepare a Master's dissertation.

## Leermateriaal

Course book. Estimated price 20 euro

## Referenties

- 1) Animal Cell culture: essential methods; Wiley-Blackwell, (2011). J.M. Davis, J. Wiley and Sons Inc., Hoboken, New Jersey, US.
- 2) Methods in Molecular Biology: 3D Cell Culture, Zuzana Koledova (Editor), Humana Press (2017);
- 3) The immortal life of Henrietta Lacks by Rebecca Skloot, (2010), Crown Publishers New York,
- 4) Textbook of drug design and discovery (2016), 5th Edition, K. Stromgaard, P Krogsgaard-Larsen, Ulf Madsen (editors), CRC Press,
- 5) Methods in Molecular Biology, Vaccine design, S. Thomas (editor), Springer, New York

## Vakinhoudelijke studiebegeleiding

Teacher and assistant available for student counseling

## Evaluatiemomenten

periodegebonden en niet-periodegebonden evaluatie

## Evaluatievormen bij periodegebonden evaluatie in de eerste examenperiode

Schriftelijk examen, verslag

## Evaluatievormen bij periodegebonden evaluatie in de tweede examenperiode

Schriftelijk examen, verslag

## Evaluatievormen bij niet-periodegebonden evaluatie

Participatie, verslag

## Tweede examenkans in geval van niet-periodegebonden evaluatie

Examen in de tweede examenperiode is niet mogelijk

## Toelichtingen bij de evaluatievormen

Lectures: written examination

Practical: written report

## Eindscoreberekening

Lectures: 90% and practical 10%

Students who eschew period aligned and/or non-period aligned evaluations for this course unit may be failed by the examiner.