VACANCY PhD

Cultured meat: consumer and sustainability

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Job title: PhD student (keuzelijst)

Department: Green Chemistry and Technology

Occupation: full time

Type contract:

Deadline for applications: 15/08/2020

Diploma: master in bioscience engineering or similar

Job description

We welcome candidates for a full time appointment as PhD student at the research group Sustainable Systems Engineering (Prof. J. Dewulf), the Research Group Agro-food Marketing and Consumer Behaviour (Prof. W. Verbeke), and the Laboratory for Animal Nutrition and Animal Product Quality (Prof. S. De Smet), all belonging to the Faculty of Bioscience Engineering at Ghent University. The PhD student will be appointed within the framework of the Strategic Basic Research project of the Flemish Science Foundation: "Cultured stem cells for customized meat design".

Summary of the project:
Cellular agriculture is a promising avenue for sustainably contributing to the growing food demand. In this respect, cultured or in vitro meat receives increasing attention. Yet, there is currently no scientific evidence that animal myofibers equivalent to meat as a nutrient dense, highly structured food, can be made in vitro. This proposal will address several existing hurdles. A major challenge is to obtain a suitable cell type capable of both sufficient proliferation and robust differentiation. Muscle adult progenitor cells have a very good differentiation capacity, yet weak proliferation capacity, whereas mesenchymal and embryonic stem cells display the opposite behavior. First, we will compare and enhance the proliferation and differentiation capacity of these three cell types, resulting in an informed choice of cell type for myofiber generation. Secondly, we will design a 'smart matrix', including food-grade components that contribute to texture, flavor and a good nutritional profile. This involves a proper choice of materials which is mutually dependent on the technological approaches to create a 3D structure. Physicochemical stability of, and cellular adhesion and survival on these new matrices will be investigated. The best performing smart matrices will be tested on their potential to support muscle cell differentiation.

These insights will be subsequently used to increase muscle fiber size and to study in vitro muscle development in a 3D architecture. In addition, strategies for stimulating the build-up of contractile proteins will be investigated. Finally, public acceptance, consumer attitudes, perceptions and intentions, as well as impact on sustainability will be assessed. This project will deliver a sound scientific basis and assessment of key technologies for advancing knowledge in this field and allowing informed decision making for downstream valorization strategies.

Your role will be focused on the public acceptance, consumer behavior, perception and intention, and sustainability impacts. In function of the development of the project, it may go along with sensory analysis. Given the multidisciplinary character of the research, collaboration and exchange with the other partners in the project will be key. The scientific findings should lead to publications in international peer reviewed journals and into a PhD manuscript

The start date is planned as October 1st, 2020.

Profile of the candidate

Candidates should have background and/or affinity with bioscience engineering, consumer behaviour and sustainability assessment methods like life cycle analysis. We are looking for candidates with a critical and analytical attitude and eager to take initiative. Affinity with animal production is a plus.

Other expectations:

- You hold a Master degree in bioscience engineering or similar.
- You have interest in scientific research in order to obtain a PhD degree.
- You have good writing and presentation skills.
- You master the English language, written and orally, in an academic context.
- You can operate both independently and in a multidisciplinary team.
- You have organisational skills and are highly motivated.
- Having experience with quantitative and/or qualitative research and with data acquisition is a plus.
- In case you have experience with project management: very welcome.

How to apply

Send an email to Prof. Dr. Ir. Stefaan De Smet (Stefaan.DeSmet@UGent.be) before August 15th, 2020, with subject 'application for CUSTOMEAT' and include:

CV, study results in a file with name 'CV *surname*'

Motivation letter in a file with name 'Motivation letter *surname*'

Contact details (name, phone email) of at least one reference one reference person

Selection will be based on competences, independent from gender, religion, ethnicity, age, sexual orientation or physical disability.

For more information, please contact Prof. Dr. Ir. Stefaan De Smet (Tel 0032 99 264 90 03, Email Stefaan.DeSmet@UGent.be)