Impact of lactation-associated gene clusters on milk production performance in goats

Context and subject description:

Bio-Sourcing is an innovative biotechnology company dedicated to the development of a biotherapeutics production platform. The company's aim is to produce biotherapeutics, in particular monoclonal antibodies, in a more cost-effective and scalable way than current biomanufacturing methods. Based in Belgium, the Bio-Sourcing team is made up of some fifteen international scientists (Brazilian, Chilean, French, etc.) who are studying the possibility of producing biotherapeutics at reduced cost in goat's milk. This production method is in line with the sustainable development objectives set out by the United Nations. In this context, Bio-Sourcing is studying the physiology of goat lactation. Indeed, the genotype of the animals can impact the level of production of the target recombinant protein and the lactation yield. With the goal to optimize the performance of the animals, our central hypothesis is based on the impact of specific gene clusters on the lactation.

It is in this context that a Win4Doc PhD project, named PROTEOMILK, is being submitted. The project will be a collaboration with Professor Patricia Renard's team, the Cell Biology research unit (URBC-NARILIS) and the mass spectrometry platform (MaSUN) at UNamur, respectively experts in the study of molecular mechanisms of cellular responses to stress and simulations, and experts in proteomic analyses and with the Walloon Agricultural Research Centre (CRA-W), within the Quality and authentication of agricultural products unit. The project will use a combination of multidisciplinary and integrated approaches combining milk biochemistry, proteomics, molecular biology, and studies of protein regulatory mechanisms (transcription, translation, secretion, etc.) in *in vivo* and *in vitro* models of mammary gland epithelial cells.

Profile required:

We are looking for a person with a university degree in life sciences, such as bioengineer, civil or industrial engineer with a (bio)chemical orientation, veterinarian, master's degree in biomedical sciences, master's degree in biochemistry and molecular and cellular biology.
The researcher has an interest in the use of genome editing tools for living organisms. An interest in analytical methods such as mass spectrometry and/or cell regulation mechanisms will be an asset. Familiarity with milk biochemistry will be an advantage.
He/she will be rigorous, organized, and efficient. Fluency in English is essential, as are good communication skills. A driving license with a personal vehicle is desirable.

Location and date of PhD project:

The PhD will take place in Namur, Belgium, at the University of Namur. Part of the work will also be carried out within the company, which is located in Liège, and in the CRA-W facilities in Gembloux. Subject to funding being granted, the PhD will start between June and October 15, 2024 and last 4 years.

Supervision of PhD project:

For the duration of the PhD, you will be supervised by Patricia Renard at the University of Namur and will work in collaboration with scientists from Bio-Sourcing and CRA-W. Applications should be sent to Patricia Renard - patsy.renard@unamur.be, Floriane Doudiès - floriane.doudies@bio-sourcing.eu - and Lola Dechêne - lola.dechene@bio-sourcing.eu. We are available to answer any questions you may have prior to your application.

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