

Final report

Name of intern: Bartosz Maliński

Home University/Country: University Of Agriculture In Kraków

Subject: Biotechnology

Guest University/Country: Linköping University

Name of supervisor: Beatrice Toia

Part 1. General information about

1.1 your application (motivation)

I have decided to apply to BARI internship program, since I wanted to gain some experience while working in lab. I was always interested in working with cell cultures and since I felt like I didn't have much opportunities to do that during my time at University Of Agriculture In Kraków, participating in this internship program seemed like a good solution. Other thing is that I also wanted to put my English skill to the test.

1.2 your preparation

Regarding the travel I had to figure out what is the cheapest and at the same time the most efficient way of travel. I also had to find an accommodation for 3 months. Because of current pandemic I had to learn about all the laws and restrictions in force in Sweden. Regarding the project itself, I had to refresh my memory of some aspects of molecular biology, that I have already learned about during my studies. Other than that I had to learn more about aspects, that were new to me, covered in the project.

1.3 your travel

Since I was lucky enough to have a car, I decided to go to Linköping by car. It allowed me to take with me much more things, on which I would have to spend lots of money if I would travel by plane. I drove from Kraków to Gdynia, and from there I took a ferry for which I had to buy a ticket. The ferry travels between Gdynia and Nynäshamn. From Nynäshamn it was a 2,5 hour drive to Linköping.

1.4 your accommodation

I found my accommodation on one of the facebook groups. I posted a post there explaining my situation and I got a response from my future landlord. During my time in Linköping I was living in the area called Lambohov which was located around 10-15 minutes away from the university.

1.5 your life in the host country

I really enjoyed my stay in Sweden. I managed to meet lots of very nice and friendly people. I have learnt a lot about the Swedish culture. I also managed to experience all the things that Sweden is known for, for example all the aspects of characteristic Swedish nature and countryside. In general I really enjoyed the whole experience and I'm glad that I decided to take a part in BARI program.

Part 2 Information about the project and your tasks

2.1 Information about the research project (short description of the project and your tasks)

The aim of the project was to gain knowledge of telomere biology, specifically the mechanisms that undergo when telomeres lose protection. Eukaryotes organize their genomic material in linear chromosomes, where the DNA ends (telomeres) need to be protected from DNA damage response (DDR) mechanisms, erosion from nucleases, and other harmful pathways. This task is fulfilled by the generation of a T-loop, a "knot" structure in which the single stranded telomere ends folds back into the duplex DNA, and the telomere are safe. Defects in T-loop generation leads to telomere deprotections and promotes DNA damage response (DDR) activation, telomere fusions and genome instability, all markers of cancer. In this project, the trainee will study how telomeres that cannot generate the T-loop are processed in mouse cell lines and in human cells, both normal and tumoral.

My tasks were to learn how to grow both human and mouse cell lines, generate transient Knock Down (KD) or permanent Knock Out (KO) of specific genes, collect samples for metaphases and Western Blot analysis. I also performed CO-FISH (Fluorescence In Situ Hybridization) staining for fluorescence microscopy and image analysis.

2.2 your colleagues

In the department there were few research groups. In the group that I was in there were 3 PhD students, one master degree student and one research assistant.

2.3 the research institution

The Department of Biomedical and Clinical Sciences (BKV) is a new department which started on January 1st, 2020. The Department is one of the largest at Linköping University with affiliation mainly to the Faculty of Medicine and Health Sciences.

2.4 your experience working within the project

As I described above I have learnt lots of new things. Even though I have been familiar with the methods that I have been working with during internship, I have never been fully able to perform them autonomously. So to be able to do that and gain very important practical experience with them was very important to me. I have gained a lot of more in depth information and knowledge about the DDR mechanisms and other aspects of molecular biology that were connected to the project.

"I agree that my report and accompanying pictures may be used in whole or in part by the BARI-Programme and its funders in printed materials, presentations, and on websites in order to inform funding organizations, sponsors, and students about the BARI programme."

Bartosz Kiełbasiński