

Final report

Name of intern: Kinga Konkol

Home University/Country: University of Gdansk, Poland

Subject: TCR gene therapy in cancer

Guest University/Country: Max-Delbrueck-Center for Molecular Medicine in Berlin, Germany

Name of supervisor: Krystyna Dudaniec

Part 1. General information about

1.1 your application (motivation)

I am a Master student at the Intercollegiate Faculty of Biotechnology at the University of Gdansk. Although there are many lab courses included in the programme of my studies, I am aware that the more practical experience I gain the more attractive candidate I would seem for my future employer. That is why for my internship I wanted to choose a lab where I could learn as much new techniques as possible in the field that interests me the most which is cancer research. Apart from that, I wanted to see how work in a research laboratory looked like abroad before choosing my future career path.

1.2 your preparation

Due to the coronavirus pandemic and restrictions introduced at MDC, my leave for the internship was unsure until "the last moment". Even though I managed to prepare everything on time for my leave.

1.3 your travel

As Berlin is not so far away from Gdansk, I bought a ticket for a direct train from Gdansk to Berlin. The travel took around 6-7 hours.

1.4 your accommodation

During my 3-month internship, I stayed at the guesthouse at Campus Buch. There I have met many people of different nationalities with whom I eventually became friends and still stay in touch.

1.5 your life in the host country

During the weekdays, I had to come to the laboratory to conduct planned experiments. However, in the evenings and weekends I had the time to visit the city centre to sightsee and enjoy the good summer weather. Even though the coronavirus pandemic made it a bit more difficult I had a chance to meet a lot of interesting people from all around the world living in Berlin.

Part 2 Information about the project and your tasks

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

I have completed my internship in a research group which main interest is the T-cell receptor (TCR) immunotherapy in cancer. The group currently focuses on identifying TCRs that will efficiently recognize antigenic peptides presented by major histocompatibility complex molecules (MHC) and trigger an immune response in order to kill cancer cells. My task was to test the antigen specificity of a few of generated TCRs that could be of use in TCR immunotherapy. At first, it required some bacterial and molecular biology work to generate vectors containing TCR sequence I could test *in vitro*. Then I moved to the cell culture, where I could test TCRs efficiency in recognizing the specific antigen by IFN- γ release assay (ELISA). I am glad I had a chance to witness the whole process of identifying and testing TCRs for T-cell receptor immunotherapy.

2.2 your colleagues

During my internship, I worked in a research group of prof. Wolfgang Uckert which consisted of 4 people. From the first day everyone was extremely friendly and helpful which made it easier to get to know a new workplace. In addition, there were always many people from other labs around ready to answer my questions and help whenever I needed it. By preparing short lectures, prof. Uckert, who is the head of the group, also helped to understand all of the theoretical and technical issues related to TCR gene therapy and the field of immunotherapy in general.

2.3 the research institution

The Max Delbrück Center for Molecular Medicine is an internationally renowned biomedical research center in Berlin where scientists from all around the world conduct their research in the areas of Cardiovascular and Metabolic Disease, Cancer Research, Diseases of the Nervous System, and Medical Systems Biology.

2.4 your experience working within the project

The topic of the project matched my scientific interests perfectly. I found it fascinating to be a part of a group that works on TCR gene therapy, especially since the immunotherapy in cancer became such a hot topic in science because of the Nobel Prize in 2018. I had a chance to get to know many techniques used in this field and gain more experience in mammalian cell culture. I really liked the fact that my supervisors let me work independently and trusted me with assigned tasks, which also contributed to me being more independent since the early days of the internship.

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