

International Internship at University Medical Center Göttingen

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Country: Germany

Supervisor: Dr. Eri Sakata

Institution: Structural biology of protein quality control, Institute for Auditory Neuroscience, University Medical Center Göttingen

Research in Sakata's group

I visited Dr. Sakata's lab at University Medical Center Göttingen (UMG) in Germany. The first time I met with her was when I attended in the international ubiquitin symposium in Tokyo. My laboratory's teachers had already known her, and we talked at the conference. Her research field is the structural analysis of proteasome and proteasome related proteins by Cryo-EM. Although my

research theme in Japan is about the structure analysis of the intracellular proteins by NMR, I was interested in joining her research project. The reason are that structure analysis of proteins by Cryo-EM became common in my research field, and the affinity of her project with my research theme in Japan was good. I thought this is a great chance for me in terms of getting not only knowledge about my research them in Japan but also skills to analyze the protein structures by Cryo-EM, and I decided to visit her lab.

In Dr. Sakata's lab, I worked on the structural analysis of the 26S proteasome complexed with K48-linked tetraubiquitin and Dsk2 by Cryo-EM. Forming this complex is important to degrade intracellular proteins but the structural information of the complex have not been elucidated. I performed all of the processes from the measurement of the sample by Cryo-EM to the analysis of the acquired data. Thanks to a lot of help by Postdoc and Dr. Sakata, I was able to get the data with good resolution and determine the structural information of the complex. Dr. Sakata said that the result deserves to investigate in more detail. I hope that my result will contribute to their further achievements.



After the presentation of research achievements.
(Left: Dr. Sakata)

In addition to the main project, I also worked on the research project of a local student. The student was struggled with the preparations of ubiquitinated proteins and ubiquitin related proteins. I had some knowledge about the preparation of those proteins, and I tried to solve the problem with the local student. Finally, we succeeded to get the target proteins with large amount and good purity.

Research environment:

Dr. Sakata's lab collaborates with Prof. Rubén's lab that is in the same building. The total number of people was more than 20, and it was good for me because I was able to enjoy discussing with many people in the lab about research.

The research environment in Göttingen was different from that in Kyoto. First, it was rare that people work in the lab after 7 pm. People in UMG cherish their work-life balances and finish their daily tasks efficiently within the designated work hours. Second, there were wide variety of nationalities in the lab. I thought most of the people in the lab are German before visiting the lab. But, more than half of the members were from other European countries, Asian countries, and USA.

Daily life in Germany:

Göttingen is a small town in Germany. I like the atmosphere of Göttingen because we can enjoy the views not only beautiful natures but also western-style architectures. In addition to the great views, the life in Göttingen was comfortable. The town is quiet at night, and I was able to feel relax by seeing nature views while commuting to the lab.

I was satisfied with the food in Germany. There were wide variety of delicious sausages and delicious frozen foods in grocery stores.

In addition to the life in Göttingen, I traveled a lot on weekend. Going to other European countries is easy, and I went to Paris, Vienna, and Switzerland. The most impressive memory in my travel is watching football game. I am a large fun of football, and I was excited at the game of "Paris San German".



Photos of Göttingen.

Acknowledgement:

Here I would like to express my appreciation to Dr. Eri Sakata and Prof. Rubén Fernández (Group Laboratory) for accepting me as a practical student and giving me a great chance to work on the research project in Germany. I hope I will devote myself to reflect all of my experiences at Göttingen in my research life and in my research progress.

Finally, I greatly appreciate Japan Gateway Program for the support which made everything possible.



Picture with Dr. Sakata and Prof. Rubén lab member.