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M1 Chemistry, Biology and Medicinal Drugs

Internship 2022 - 3 months (June - August - 2022)

My "TAKENOKO" internship at Okayama University



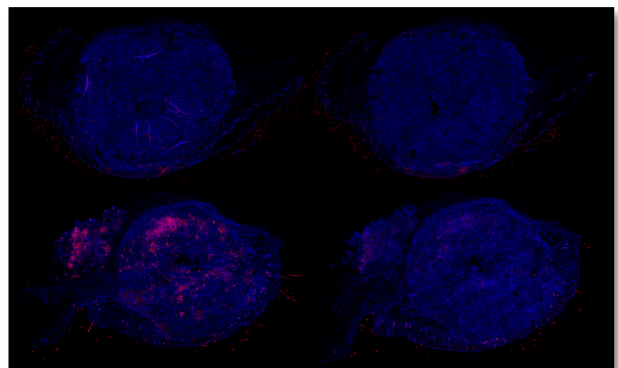
Currently in Japan for a 3-months internship, I am working in the team of Pr. Uono, in the Department of Immunology of Okayama University.

My research topics: Expert in antitumor immunity, the laboratory is focused on new ways to stop tumor expansion. Among others, metformin's action, an antidiabetic treatment, and the thioredoxin interacting protein (Txnip) are deeply studied for their involvement in tumor suppression. My work consists of testing the efficiency of a Txnip-involving heat shock-inhibition treatment on different tumoral cell lines to understand and evaluate the differences observed among the activated pathways.

My research outcomes:

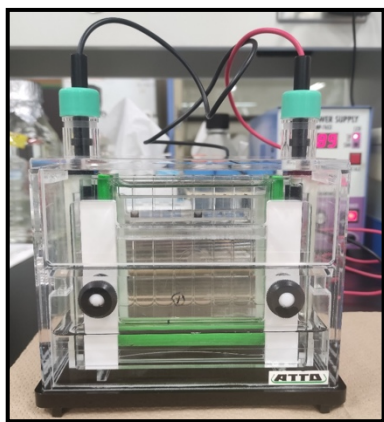
Thanks to the invaluable Western Blot technique, I have **identified resistant and sensitive cell lines**, showing the very challenging understanding of the unique tumoral cell metabolism. In search for ways to analyze databases to compare gene expression, I have found a very powerful R package called "TCGAbiolinks" that allows to search, download, and prepare relevant data from "The Cancer Genome Atlas Program" for analysis.

Totally new comer in the field of programming but aware of the power of Data, I decided to develop **my computational skills with R**, a software environment for statistical computing and graphics. Seeing the interest of my lab for this tool but knowing that programming environment can be hard to get into, I decided to **elaborate a tutorial** that would allow a beginner to perform a complete analysis with TCGAbiolinks.



Immunohistochemistry analysis of pSTAT1 and pSTAT3 proteins

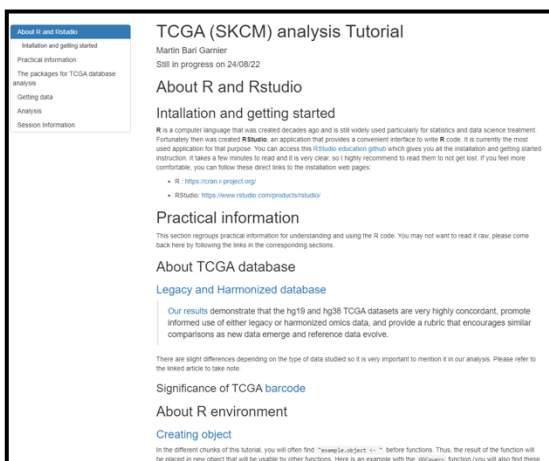
In parallel to this tutorial, I have done a few immunohistochemistry experiments to visualize proteins of interest which were not directly related with Txnip. It was more for my curiosity of learning new techniques and still participating in the lab's work.



The famous Western Blot (migration step)

Internship background - It is first thanks to the University of Strasbourg in France that I can realize this internship in Japan to validate my first year in the Master "Chimie, Biologie et Médicament". I benefit from the precious historical connection between France and Japan, and I hope to honor it with my work. The reasons of my choice of Japan are numerous so let me cite a few of them.

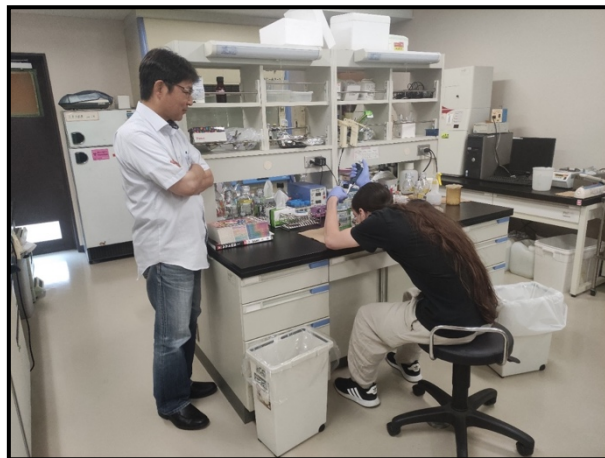
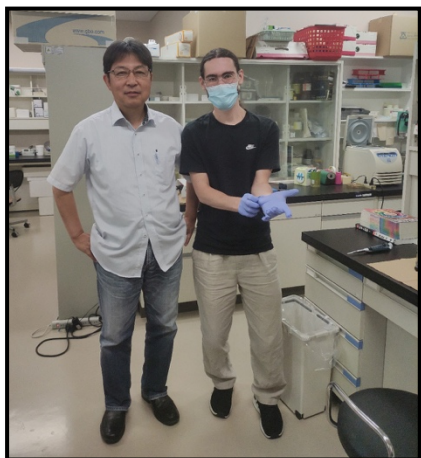
On one hand, Japan has an image of excellence, hard work and high-level science research that shines over the world since many decades now. In that way, I was sure to develop my biology theoretical



My tutorial for using the TCGAbiolinks package for R

and experimental skills at full potential in Okayama University. This is an institution where several graduate schools are related to the fields I'm studying and where the environment nicely matches my wish to apply for an internship. My hearings of the Graduate system in Japan, mostly centered on active research, is something I was really looking for to complete my experience.

Also, I'm a passionate of video games, manga and of Japanese animation movies. Graphics, music, and global spirit of these arts are unique wonders to my sense. They were always present on my TV and computer screens since I was kid, and they haven't left since then. I had my first Dragon Ball Z volume at 12 and today 23, I am reading JoJo's, my favorite.



Udono sensei and I in the laboratory

Japanese's gastronomy also means something for me as because the occasions I went to Japanese restaurant with my family were always unique and festive. I love those tastes that cannot be found in the French or European gastronomy. Meeting the Motherland of this culture would be a huge step closer to its understanding and so its appreciation.

To conclude

I would like to conclude this description with a special thanks the Association of the Former Francophone Awardees of the Japan Society for the Promotion of Science (JSPS) that supported me with a Takenoko scholarship attribution. This represents a great assistance in this international mobility, a relief that encourage me to enjoy with a lighter mind this beautiful country, culture and so work in better conditions in this amazing team. For that, I would like to give a special thanks to Dr. Marie Claire Lett my sponsor in the association that assisted me during the whole procedure. I would like to thank Pr. Bernard Chenevier for being a first warm contact in Japan, the link with my Pr. Udono and for supervising the whole mobility, which was also importantly facilitated by Anne Poquet.