

# FINAL REPORT

## Personal data and general information on the internship

Subject of studies: Biology

Course of studies: Master

Internship period: 23.03.2024 –  
22.07.2024

Internship location: Madrid, Spain

Internship institution: Instituto de  
investigación Hospital 12 de Octubre

Internship title: **Dual CAR NK cell  
product targeting both CD44v6 and  
NKG2D-L for the treatment of  
relapsed refractory multiple  
myeloma: a first glance.**

## INTERNSHIP REPORT

### 1. Planning and preparation

I decided to pursue an internship abroad to gain international experience, enhance my professional skills, and broaden my cultural understanding. The opportunity to work on cutting-edge medical research, specifically CAR-NK therapy, at a renowned institution like Hospital 12 de Octubre was a major factor in my decision. Spain has a strong reputation in medical research and healthcare, and Madrid is home to Hospital 12 de Octubre, which is known for its innovative research and advanced facilities.

Additionally, the prospect of living in a vibrant city like Madrid with its rich cultural heritage was very appealing. With regards to the application process, it was very easy thanks to all the people working at LMU career services. I began the application in March 2024. It involved submitting a resume, cover letter, and academic transcripts through the career service's online portal. On the other hand, to get an internship in the Hospital, I had an initial interview with the head of the Hematology department, Dr. M. I received my acceptance notification in February 2024. If you are wondering how my journey was, it was very smooth. I had to organize my Learning Agreement, Grant Agreement, and other administrative paperwork.

## **2. Internship**

I was entrusted with conducting laboratory experiments related to CAR-NK cell preparation and testing, analyzing experimental data, documenting results, participating in weekly lab meetings, presenting findings, and assisting with clinical trial coordination and patient sample processing. I was very busy during my internship; I was fully occupied with a variety of tasks that provided a comprehensive learning experience and kept me engaged throughout the internship. I learn a wide range of molecular biology techniques as well as a lot of gene therapy, and has helped me to find what I want to do for PhD: immunotherapy.

A typical working day involved arriving at the lab at 9 AM, conducting experiments, analyzing data, attending lab meetings, and working on reports or presentations. The day usually ended around 6 PM, with occasional longer hours depending on the project needs. Throughout my internship, I received excellent support and supervision from my mentor, Dr. G., and the entire hematology department. They provided guidance, feedback, and mentorship. I learned through hands-on experience, watching my supervisor working in the lab, reading protocols, direct supervision, and regular feedback. I gained proficiency in CAR-NK cell therapy research, data analysis, presentation skills, and laboratory techniques such as cytotoxicity assay (calcein assay), western blot, flow cytometry, lentiviral transduction, primary cell culture of keratinocytes and different experiments using primary cells from multiple myeloma patients.

## **3. Social contacts**

The interaction with my colleagues was very positive. They were welcoming, supportive, and created a collaborative working environment. We often socialized outside of work, which helped build strong relationships. Specially, I was much closed with R. and S., two other master's thesis students. I also made several local friends through language courses and social activities, which enriched my cultural experience in Spain.

## **4. Daily life and free time**

I spent my free time exploring Madrid, visiting cultural sites, and participating in social events. I also enjoyed trying local cuisine and attending festivals. I also joined the gym next to my apartment where I attended Zumba and indoor clico classes where I met a lot of nice people. Somedays, after sport classes we went to have some drinks in a typical Spanish bar.

To move around Madrid, I always used its public transport since it has an excellent public transport, with an extensive network of buses and metro lines. I used it regularly to commute to work and explore the city. Moreover, for students the public transport cost 8 euros per month! Nevertheless, I have to say that there are a lot of people, and it was very uncomfortable for me, especially June and July when it was 40°C outside and some subways did not have air conditioning.

If you are thinking of doing an Erasmus in Spain, I would recommend to learn some basic Spanish, live next to the place you will do you internship, take advantage of the nice national train services they have which is very cheap and you can visit nearby cities such as Valencia, Segovia, Toledo... In case you have any administrative questions, I recommend contacting the Erasmus+ office at LMU.

## **5. Cost and financing**

Managing the budget was a crucial aspect of my exchange experience. The cost of living in Madrid is relatively high, especially compared to other cities in Spain. To stay within my budget, I:

Chose shared housing with other students, which was more affordable than renting a private apartment. This also enhanced my social experience, as I lived with other international students. I balanced eating out with cooking at home. Madrid has a vibrant food scene, and while I enjoyed trying local cuisine, cooking at home was a more economical choice for daily meals. I allocated a portion of my budget for exploring Madrid and traveling to other parts of Spain. By planning trips in advance and using student discounts, I was able to visit various cultural and historical sites without overspending.

During my Erasmus exchange in Madrid, the primary source of funding that supported my stay was the Erasmus+ Grant program that provided a monthly stipend to assist with

living expenses but I needed the help of my parents, so I also received financial support from my family.

## **6. Internship and studies**

During my internship, I was able to apply my theoretical knowledge and previous laboratory experience in the practical tasks assigned during my internship. The internship has significantly increased my motivation to study and pursue a career in medical research. It has also improved my study habits by emphasizing the importance of practical applications of theoretical knowledge.

## **7. Conclusions**

During my internship I expected to gain hands-on experience in medical research, improve my Spanish, and immerse myself in a new culture. All these expectations were fulfilled. The supportive environment at the hospital and the vibrant culture of Madrid exceeded my expectations. The main challenges were adjusting to a new research environment. I highly recommend this position to other interns due to the valuable professional experience, supportive colleagues, and the opportunity to work on innovative research in a renowned institution. Lastly, my receiving institution expressed a willingness to accept future interns. The collaborative and supportive environment, along with the exposure to cutting edge research, has profoundly influenced me. Beyond the technical skills, I learned the importance of teamwork, adaptability, and cross-cultural communication. I finally wanted to thank all the support Career Services of LMU has given me, and for making my Erasmus possible.