

## Early Career Immunologist in the Spotlight

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#### **funding/prize was received**

Research for which the

The Veni grant from the NWO (Dutch Research Council) is part of the NWO Talent Programme and the target group consists of researchers at the stage of transitioning towards independence. The Veni grant is aimed at researchers with academic qualities that clearly exceed what is customary and it is intended to finance academically innovative research and to give these researchers the opportunity to develop themselves as independent researchers. <https://research.prinsesmaximacentrum.nl/en/news-events/news/four-veni-grants-awarded-for-groundbreaking-childhood-cancer-research>

#### **Brief description of the research:**

**Ana:** Microproteins in immunity: A new key to immunotherapy. With this grant, I will explore a relatively unknown class of small proteins called microproteins. These tiny molecules are broadly recognized for their important cellular functions, and I want to find out if they also affect dendritic cells, the architects of our immune system. By developing new methods to study microproteins in these cells, I aim to uncover how they can enhance immune responses against childhood cancer. If microproteins do shape how dendritic cells react to cancer, this could open the door to new treatments that make immunotherapy more effective for children with cancer.

**Tiago:** Breaking Immune Barriers: Targeting myeloid inhibitory receptors in pediatric brain cancers – I am studying a new way to treat childhood brain cancer by targeting inhibitory receptors, the molecules that act like brakes on the immune system. By releasing the brakes on anti-tumoral myeloid cells, I am aiming to trigger a stronger immune response against brain tumors. I hope this work will pave the way for more effective immunotherapies where T cell approaches have failed, offering new hope for children with hard-to-treat brain tumors.

#### **How will this grant/award support your future career?**

**Tiago:** I believe this award provides an important step towards my scientific independence. It gives us the opportunity to consolidate our own ideas into actual research lines and build a stronger network within the immunology community.

**Ana:** I agree, and it gives us the visibility and confidence to think about the next steps. Whether that means establishing our own group here in the Netherlands or eventually returning to Portugal. It's a recognition that opens doors both nationally and internationally.

**In your view, what does the Dutch research environment contribute in comparison to that of your home country?**

**Ana:** The Netherlands offers a very collaborative and well-structured scientific ecosystem, with excellent infrastructure and clear opportunities for early-career researchers, as the example of the Veni grant.

**Tiago:** Yes, I fully agree. In Portugal, the community is smaller, and the (financial) resources are more limited, but there is a lot of creativity, adaptability, and willingness to do so. We feel inspired by both the Dutch system's organization and the Portuguese drive and resilience.

**What do you see as the biggest challenge in immunology today?**

**Tiago:** One of the main challenges is integrating the enormous amount of data we now generate, from single-cell analysis to spatial and systems immunology, and translating these into a functional meaning and immune mechanisms.

**Ana:** Exactly, and translating this understanding into personalized yet accessible therapies remains a huge hurdle. Bridging the gap between fundamental immunology and real-world application – how to bring, for example, new immunotherapies to patients and which patients to treat and how to treat them, will define the next decade of immunology.

**What key advice would you give to young NVVI researchers?**

**Ana:** Stay curious and open-minded. Immunology is full of unanswered questions, from basic ones like how a tiny, previously unknown protein can influence key processes such as antigen presentation, to how immune cells communicate with their neighbors. I'm constantly amazed by how much we think we know about the immune system and how incredibly complex and intelligent it is.

**Tiago:** Indeed, curiosity is the driver. I would add, building a career in science takes time, persistence, and hard work. But it is fun and there are so many times of joy at the same time. Surround yourself with people who inspire you; it is key.

**How do you maintain a healthy work–life balance?**

**Tiago:** It can be challenging! We are both passionate about science and love to talk about it, but we try to maintain clear boundaries between work time and personal time. Travelling, cooking together, and spending time with friends help us recharge.

**Ana:** Sometimes it can be really challenging. We try to use our commuting time to talk about our day, and if we need to discuss work-related topics, we keep those conversations at work. Weekends are always science-free, we use them to relax, watch Formula 1, or do some DIY projects in our garden. Living abroad can be intense as well, but sharing this journey makes it easier.

**Does receiving this award influence your decision to stay in the Netherlands or return to Portugal?**

**Ana:** The Veni will allow us to extend our stay in the Netherlands and further mature our research lines in our current lab. For now, our focus is on developing our research here, but we keep the option open to return someday.

**Tiago:** The Veni grant is highly prestigious, and personal grants of this kind are also greatly valued in Portugal. Returning to Portugal is more than a scientific transition; it's also a personal move that involves family, lifestyle, and work–life balance. But bringing our scientific contribution to our roots is definitely on our horizon.