

# Verónica González-Doblas

**V**erónica González-Doblas is a research group leader in the Department of Cellular Biology, Genetics and Physiology at the Málaga University Institute for Mediterranean and Subtropical Horticulture “La Mayora” (IHSM-UMA-CSIC), Spain. Verónica is a Fellow of *The Plant Journal*.



communication. From 2018 to 2020, I joined the group of Herman Höfte at INRAE Versailles (France) and expanded my knowledge on cell wall integrity signaling driven by small peptides.

### *What is your lab working on currently?*

Since September 2020, I have been leading an independent research group at the Institute for Mediterranean and Subtropical Horticulture “La Mayora” (IHSM-UMA-CSIC) in Málaga. The lab’s main objective is to uncover and understand novel functions of small peptides. While many small peptides with a wide range of roles have been identified in the model plant *Arabidopsis thaliana*, there is still much to be discovered. We are particularly interested in investigating the role of these molecular players in the development of fleshy fruits, using tomato as a model system. To accom-

plish this, we are utilizing a combination of bioinformatics, biochemistry, physiology, and CRISPR/Cas technologies to examine fruit ripening from the perspective of cell-to-cell small peptide communication.

### *What does a typical day look like for you?*

I value spending time with my young son and make it a priority to accompany him to school each morning. Alongside my role as a researcher, I am also a lecturer at the University of Málaga (UMA) where I teach Genetics at the undergraduate level. A typical day for me is similar to that of many researchers, including writing reports, attending meetings, and discussions with members of my research group. The most exciting part of my job is when I get to delve into the science by analyzing data, designing new experiments and conducting research.

### *Tell us about your background. How did you first become interested in plant science and the role of peptides?*

I have a background in Biology, having graduated from the University of Málaga (UMA) in Spain. During my degree, I became fascinated by the complexity of plants and how they adapt to changes in their environment. To survive, plants use intricate mechanisms and signaling pathways to coordinate their development and to respond to stress. I pursued my PhD at UMA under the supervision of Miguel Botella, where I researched plant tolerance mechanisms to abiotic stress. Following my PhD, from 2013 to 2017, I completed postdoctoral training at the University of Lausanne (Switzerland) in Niko Geldner’s lab. During this time, I discovered two small peptides that function as a highly specific mechanism for sensing the integrity of root endodermal barriers. This experience deepened my interest in the role of small peptides in cell-to-cell



*Left:* Tomato cultivar MoneyMaker growing in the greenhouse ready to be injected with small peptide constructs. *Above:* Tomato seedlings grown on *in vitro* culture to assess the effects of small peptides on root growth.

### *What do you most enjoy about your work?*

At this stage in my career, I find myself with less and less time to be directly involved in the hands-on laboratory work that I find most enjoyable. The process of experimentation and trying to fit all the pieces together to understand a phenomenon is what I love most about my work. Throughout my academic journey, my research has consistently been driven by unexpected results and the thrill of working on an unpredictable line of inquiry is what I find most exciting.

### *What do you find most challenging?*

I believe that every aspect of science presents its own set of challenges. As scientists, we must constantly learn new techniques and adapt to new responsibilities as we progress in our careers. One of the biggest challenges for me is staying current with the latest developments in the field, which requires a significant amount of time and effort. It often feels as if 24 hours in a day is not enough to keep up with everything and make the progress we desire in our research.

### *What is your lab hoping to work on in the future?*

So far, my research has mainly been focused on basic research, and I've been using *Arabidopsis* as a model plant to gain a deeper understanding of the underlying biology. However,

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Above: Tomato fruit at different ripening stages.

in light of the challenges that modern agriculture faces, such as climate change and the need to produce more food to feed a growing population, I believe it's important to also focus on applying this knowledge to improve crop production. In the future, as I continue to lead my independent research group, I hope to work more on translating the knowledge gained through my research into practical agricultural applications. The Málaga University Institute for Mediterranean and Subtropical Horticulture is well suited for this goal as it promotes research and innovation in subtropical and Mediterranean crops such as tomato, strawberry, mango, and avocado.

### *What advice would you give to aspiring scientists in this area?*

My advice to aspiring scientists is to pursue the research that you are passionate about and that you are curious to find the answers to. It's important to have patience, as many experiments will fail at first and you will face rejection of grants, papers and fellowship applications. It's important to learn from criticism and not give up. When looking for a PhD supervisor or postdoc mentor, it's crucial to choose someone who will be a good fit for you and who will be a mentor not

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just for that specific period of your career, but for your entire scientific journey. Building a support network of trusted individuals, who you can go to for advice, to chat or to collaborate on grants, is also important. And lastly, it's important to have a healthy balance between your scientific career and your personal life, including family, friends, hobbies and other interests.

### *Who are your scientific heroes?*

Since 2019, I have been balancing my scientific career with my role as a mother, and I have come to realize that it is not an easy task. During this time, I have come to appreciate the effort and determination of all women who have successfully combined a scientific career with motherhood. Although there are now more women in science who are also mothers, the number is still not equal to that of men who are fathers. However, some of my true scientific heroes are women from the past who accomplished this task at a time when it was not as accepted as it is today. If I had to choose one scientific hero, it would be Maria Salomea Skłodowska (Marie Curie), who not only made groundbreaking contributions to her field of research, but also raised two children.