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First person – Simona Amodeo

First Person is a series of interviews with the first authors of a selection of papers published in Journal of Cell Science, helping early-career researchers promote themselves alongside their papers. Simona Amodeo is first author on 'Characterization of the novel mitochondrial genome segregation factor TAP110 in *Trypanosoma brucei*', published in JCS. Simona conducted the research described in this article while a PhD student in the lab of Torsten Ochsenreiter at the Institute of Cell Biology, University of Bern, Switzerland. She is now a postdoctoral researcher in the lab of Professor André Schneider at the Department of Chemistry, Biochemistry and Pharmaceutical Sciences, University of Bern, investigating mitochondrial biogenesis and ribosomes in *Trypanosoma brucei*.

Simona Amodeo

How would you explain the main findings of your paper in lay terms?

A cell needs to produce energy in the form of ATP, which is used in numerous vitally essential energy-consuming reactions. Eukaryotic cells, such as the cells of our body or those of the single-celled parasite *Trypanosoma brucei*, produce this energy in their mitochondria. The majority of the genes carrying the information to produce proteins responsible for energy production are encoded in the nuclear genome. A small part of the information, on the other hand, is encoded by the mitochondrial genome. To allow correct inheritance of the mitochondrial genome, *T. brucei* has evolved a smart strategy of anchoring its mitochondrial genome to the basal body of the flagellum, another essential organelle (one that allows locomotion). Little is known about the structure that allows stable attachment of the mitochondrial genome to the basal body, and we are trying to shed some light on that mechanism. With TAP110, we have found the most mitochondrial-genome-proximal protein of the complex structure that is responsible for the attachment.

Were there any specific challenges associated with this project? If so, how did you overcome them?

We struggled with the phenotype when we depleted or overexpressed TAP110. To determine a protein's function, it helps a lot to characterize the effects of its depletion. We had to find other ways to shed light on TAP110's function. We also tried to generate an antibody, but this failed, despite the fact we were able to nicely produce recombinant protein.

When doing the research, did you have a particular result or 'eureka' moment that has stuck with you?

One 'eureka' moment was the finding that TAP110 is now the most mitochondrial-genome-proximal protein, raising the question and possibility that it might be involved in attachment of the mitochondrial genome to its anchoring structure the TAC. The second was when we discovered it might interact with a protein that shows a dual localization pattern in the mitochondrion and the nucleus.

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Why did you choose Journal of Cell Science for your paper?

Our past experience of publishing in JCS has been very good and we appreciate the efforts of The Company of Biologists to promote young scientists. As the characterization of TAP110 involved use of state-of-the-art microscopy methods, we were convinced that our study is a good fit for this journal.

Have you had any significant mentors who have helped you beyond supervision in the lab? How was their guidance special?

Torsten's role as a mentor became more and more important with every year I worked in his lab. He turned me into a scientist who is able to develop her own projects and pursue her own research.

What motivated you to pursue a career in science, and what have been the most interesting moments on the path that led you to where you are now?

I am a curious person and always eager to solve problems. I think this is an advantage in remaining motivated as a researcher. After my PhD, I returned to teaching at high school, and within weeks

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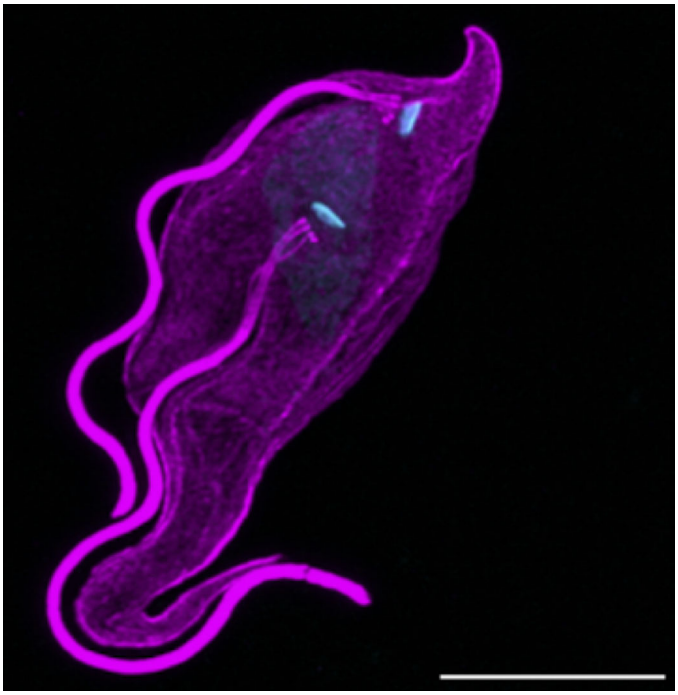

Image of an expanded procyclic-form *T. brucei* cell with an incredible length of around 100 µm. Tubulin (magenta) was detected by an anti-tubulin antibody, DNA (cyan) by DAPI. Image credit goes to our expansion microscopy expert Ana Kalichava (PhD student in Torsten Ochsenreiter's research group). Scale bar: 20 µm.

I missed the bench work and doing research in general so much that I decided I had to return to science and pursue a career as a researcher.

Who are your role models in science? Why?

All women that became PIs alongside having young kids. I admire these strong women who must have an incredible amount of energy and organizational talent and who will certainly also have had to deal with discrimination in one way or another.

What's next for you?

For the next few years, I'm planning to stay in academia to gain research experience and work on my professional development as an independent researcher. I don't know what comes next, but at the moment I am convinced that I want to stay in science, as this is what I really enjoy doing.

Tell us something interesting about yourself that wouldn't be on your CV

If I ever got to the point where I can't call research my passion anymore, then it would be time for me to think about an apprenticeship as a chef, because whenever I have enough free time, I enjoy spending it in the kitchen.

Reference

Amodeo, S., Kalichava, A., Fradera-Sola, A., Bertiaux-Lequoy, E., Guichard, P., Butter, F. and Ochsenreiter, T. (2021). Characterization of the novel mitochondrial genome segregation factor TAP110 in *Trypanosoma brucei*. *J. Cell Sci.* **134**, jcs254300. doi:10.1242/jcs.254300