

## FIRST PERSON

# First person – Levente Kovács

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. Levente Kovács is first author on 'Usp14 is required for spermatogenesis and ubiquitin stress responses in *Drosophila melanogaster*', published in JCS. Levente conducted the research described in this article while a PhD student in Dr Péter Deák's lab at Department of Genetics, University of Szeged, Hungary. He is now a postdoc in the lab of Prof. David M Glover at the Department of Genetics, University of Cambridge, UK, investigating biochemical and genetical pathways influencing centrosome and cilia biogenesis.

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

There is a small molecule called ubiquitin, which is important in regulating various processes in the cells because it influences stability or interactions of different proteins. Since ubiquitin is so important it is also important to accurately regulate its level. Certain proteins (briefly called DUBs) are involved in the regulation of ubiquitins. During my PhD studies, we found that one of the DUBs, called Usp14, is important for the generation of sperm and this is because of its role in maintaining the ubiquitin level. Our results highlight that different tissues show a differential requirement for ubiquitin, and spermatogenesis is very demanding on that.

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

The challenge came at the very beginning of the project when we wanted to understand the male sterility of *usp14* fly mutants and whether this is linked to ubiquitylation. The ultimate solution came when we observed the genetic interaction with the hypomorph mutant of the testis-specific ubiquitin gene *Ubi-p63E*.

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

The moment when I looked at the testis preparation of Usp14-Ubi-p63E double mutant in the microscope without much expectation or hope that this would give a meaningful result and noticed that the double mutant phenotype is doubtlessly stronger than that of either of the single mutants! Then, the fact that the measurements of ubiquitin levels are in accordance with the genetic interactions gave an additional reassurance and joy.

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

Because it is a well-known high-quality journal reaching a broad audience in the field of biology.

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

My former PI, Péter Deák was such a mentor for me. Besides his supervisor role in the lab, his advice also helped me to become an independent thinker and be able to cope with competitive situations. His guidance (I would call it coaching) also helped me to work out a



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healthy fusion of lab and private life. My colleagues Margit Pál and Olga Nagy helped me learn healthy stress management and keep confidence. I should mention two early mentors from my high school years, my biology teacher Anna-Maria Leopold and my Research Student Association mentor Prof. Péter Csermely, whose guidance let my passion for science ignite. My parents, my wife, Sarolta, and my little son are also providing me guidance to properly evaluate the emerging situations.

### 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?

These moments happened sometime in my childhood when some comic books (for example 'Teenage Mutant Ninja Turtles') and popular science news (cloning of Dolly and *in vitro* fertilization) led me to recognize that scientists can see rare, difficult to access things like the particularities of how life works. Winning my first science presentation competition in high school, the generation of my first *Drosophila* mutant in university, and getting engaged in interesting scientific knowledge and questions during my PhD and postdoc years were all things that kept me on the scientific path.

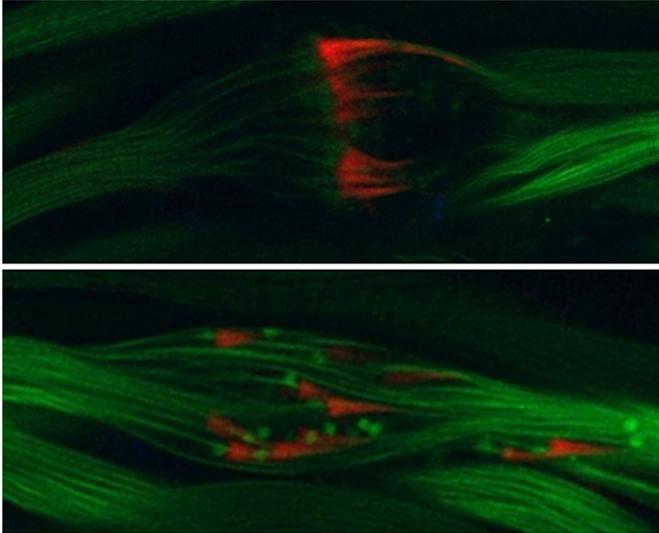
### Who are your role models in science? Why?

Albert Szent-Györgyi because of his passion for science and his ability to keep doing research in hard times.

### What's next for you?

My aim after my postdoc is to become an independent lab leader and be successful also in the sense of being able to transmit the joy of doing science to my future colleagues and students.

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Actin cones (red) along the microtubules (green) are aligned and move synchronously in wild-type sperm bundles (top) and are misaligned in *usp14* fly mutant (bottom).

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

A minor technical coincidence that the number of *Drosophila* mutants I generated so far exactly matches my age this year.

**Reference**

Kovács, L., Nagy, Á., Pál, M. and Deák, P. (2020). Usp14 is required for spermatogenesis and ubiquitin stress responses in *Drosophila melanogaster*. *J. Cell Sci.* **133**, jcs237511. doi:10.1242/jcs.237511