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FIRST PERSON

First person – Pawel Leznicki

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. Pawel Leznicki is the first author on 'Expansion of DUB functionality generated by alternative isoforms – USP35, a case study', published in Journal of Cell Science. Pawel conducted the research in this article while in Yogesh Kulathu's lab at the University of Dundee, UK. He is now a research associate in the lab of Stephen High at the University of Manchester, UK, investigating protein biogenesis processes and their quality control.

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

Multicellular organisms are composed of cells whose function is regulated by their constituents, such as proteins. The way proteins work is also subject to tight control through, for example, modification of the building blocks of proteins, amino acids. There are many different forms of such modification, one of which is called ubiquitylation. Ubiquitylation can change the function of a protein and often leads to protein degradation. Deubiquitylating enzymes (DUBs) reverse ubiquitylation. It is puzzling that there are tens of thousands of sites on thousands of proteins that are ubiquitylated, yet only ∼100 DUBs are known. How does such a small number of DUBs regulate a multitude of ubiquitylation events? In our study we show that, similar to other proteins, a single DUB can be made in several different forms called isoforms. Importantly, we show that DUB isoforms can have drastically different roles, contributing to the functional expansion of DUBs.

Pawel Leznicki

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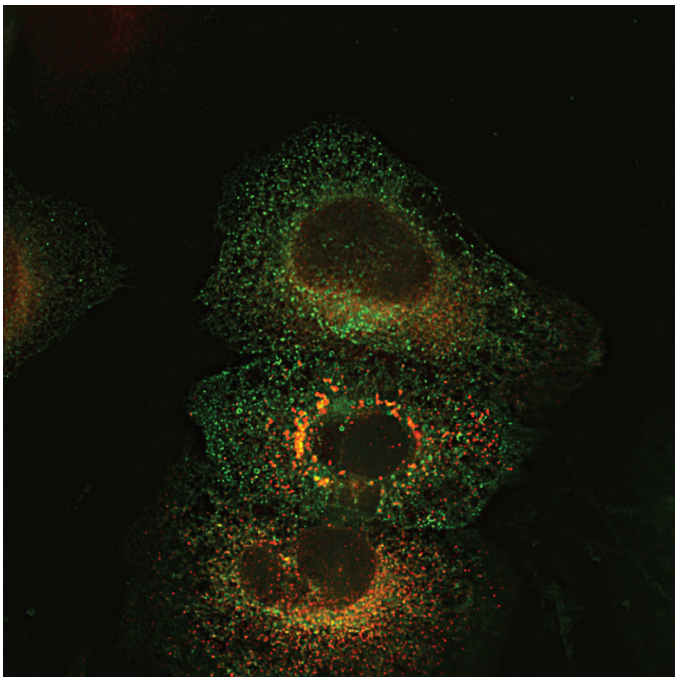

USP35 isoform 2 (green) induces caspase-8-mediated BAP31 (red) cleavage in U2OS cells

"How does such a small number of DUBs regulate a multitude of ubiquitylation events?"

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

The main challenge was that our preliminary data pointed to a hypothesis we couldn't fully reconcile in our subsequent work. However, the realisation that USP35 exists as multiple isoforms that have distinct functions was the turning point of the project and helped us put everything in place.

"The main challenge was that our preliminary data pointed to a hypothesis we couldn't fully reconcile in our subsequent work."

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

I had the pleasure of publishing several other of my papers in Journal of Cell Science and each time it was a great experience with a fair and quick review process. It is an established journal that I hold in high esteem.

Have you had any significant mentors who have helped you beyond supervision in the lab?

During my career I have encountered many excellent researchers who have shaped me as a scientist. I learnt a lot from Yogesh

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Kulathu, whom I respect for his commitment to science. Most of all, I look up to my PhD supervisor, Prof. Stephen High, who is my scientific role model. I admire the work–life balance that he has and I am extremely grateful for his continued support over the years.

What's next for you?

I have always wanted to stay in academia and establish my own research group. While this is still my goal, the collaboration with Boehringer Ingelheim during the course of the USP35 project showed me that working in industry can be equally intellectually stimulating. Hence, I am open to various possibilities.

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

I love spending time with my family, reading books and swimming.

Reference

Leznicki, P., Natarajan, J., Bader, G., Spevak, W., Schlattl, A., Rehman, S. A. A., Pathak, D., Weidlich, S., Zoephel, A., Bordone, M. C. et al. (2018). Expansion of DUB functionality generated by alternative isoforms – USP35, a case study. *J. Cell Sci.* **131**, jcs212753.