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FIRST PERSON

First person – Yvonne Kschonsak

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. Yvonne Kschonsak is the first author on 'Activated ezrin controls MISP levels to ensure correct NuMA polarization and spindle orientation', published in Journal of Cell Science. Yvonne is a PhD student in the lab of Ingrid Hoffmann at the German Cancer Research Center, Heidelberg, Germany, investigating regulation of mitotic spindle orientation and positioning in mammalian cells.

Yvonne Kschonsak

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

During each division of a cell, starting from the first duplications of embryonic cells to the duplication and differentiation of adult stem cells, one mother cell gives rise to two daughter cells. In order to achieve the equal distribution of the cellular content and especially the genetic material, the site of division has to be wisely chosen. This location within a cell is determined by the position of the mitotic spindle, an apparatus that organizes the genetic material. In our publication, we describe a novel aspect in the positioning and orientation of the mitotic spindle, showing that the levels of a protein called MISP have to be tightly controlled by interaction with another protein, ezrin. Equal forces generated on the mitotic spindle thereby ensure proper separation of the genetic material.

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

For the analysis of the spindle orientation within a mitotic cell, it is important to not only look at individual cells in a 2D cell culture system but also to study the division of cells in a 3D model with epithelial-like features (e.g. cell–cell contacts). One of the biggest challenges during my studies was to establish such a 3D cell culture system in our lab. In the beginning, the cells didn't grow as fast as they should have and even worse, they didn't grow in 3D cysts, which was really challenging because we were under quite some time pressure. I consulted everybody I knew who was working with a similar system and asked for advice. After countless discussions with my colleagues and friends, I switched to another cell clone and optimized the protocol, ultimately solving all my problems.

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

My supervisor, Prof. Ingrid Hoffmann, helped me a lot during my studies. She supported me the whole way through my PhD and helped me to acquire scientific reasoning, to work on multiple projects and taught me how to present my research to the scientific community. She helped me to become the scientist I am now. Additionally, I would like to thank a former postdoc from our lab, Dr Kathrin Brunk. She helped me a lot during my PhD, especially with the microscopy, and was never tired of answering all my questions.

> "I was so fascinated by the beauty of this process that it has always stayed in my mind."

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?

During my master's studies, I worked in the labs of Prof. Thomas Mayer and Prof. Elmar Schiebel, where I imaged cells going through mitosis. I was so fascinated by the beauty of this process that it has always stayed in my mind. During an additional internship in the UK in the lab of Prof. Nicola Curtin, I worked on DNA repair mechanisms in cancer therapy, and was immediately intrigued by the complexity and challenges of this research. Since then, I have had the goal to pursue a career in science and to do my PhD where I could discover something new and work long enough on a project to bring it to a publication.

> "[…] for me, the most important aspect of doing a PhD is: do what you love and love what you are doing."

What's the most important piece of advice you would give first-year PhD students?

Network, network, network. I realized during my PhD that besides the hard work, establishing a good network is (nearly) everything. Otherwise, for me, the most important aspect of doing a PhD is: do what you love and love what you are doing. During a PhD everyone experiences so many ups and downs and so many drawbacks. If you are not enjoying your work, you will face a hard time.

Yvonne Kschonsak's contact details: German Cancer Research Center (DKFZ), 69120 Heidelberg, Germany.
E-mail: y.schlosser@dkfz-heidelberg.de

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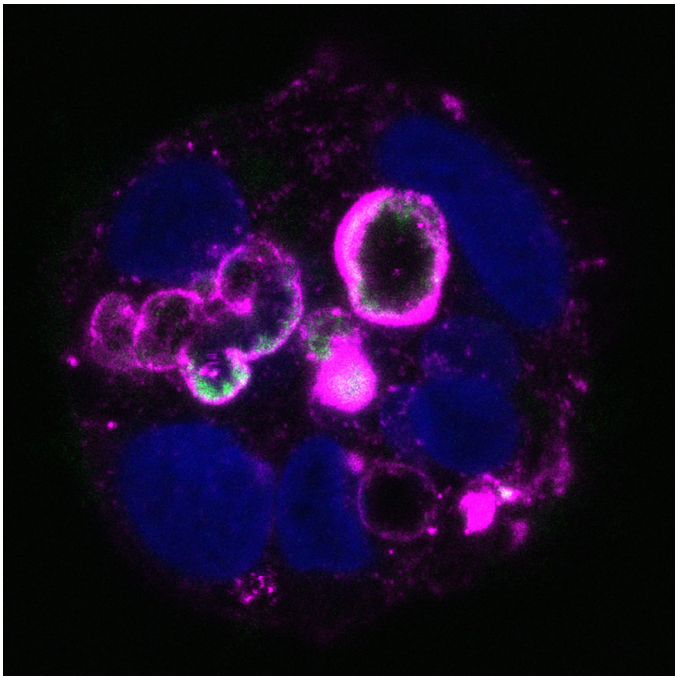

Cyst with multiple lumens stained for MISP (magenta), ezrin (green) and DNA (blue).

What's next for you?

At the moment, I am in the final weeks of my PhD. Afterwards, I would like to stay in research since I am enjoying work at the bench so much. I would like to find a new position abroad and fully devote myself to a new exciting project, either within a similar topic, like cancer research, or in a new field.

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

Besides for my passion for science, I do love to go outside and to enjoy bicycle tours on a nice sunny day.

Reference

Kschonsak, Y. T. and Hoffmann, I. (2018). Activated ezrin controls MISP levels to ensure correct NuMA polarization and spindle orientation. *J. Cell Sci.* **131**, jcs214544.