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FIRST PERSON

First person – Oddrun Elise Olsen

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. Oddrun Elise Olsen is the first author on 'BMPR2 inhibits activin and BMP signaling via wild-type ALK2′, published in Journal of Cell Science. Oddrun is a postdoc in the lab of Toril Holien at the Norwegian University of Science and Technology, Trondheim, Norway, investigating members of the TGF-β superfamily and multiple myeloma.

Oddrun Elise Olsen

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

Multiple myeloma is regarded as an incurable disease. Even though many patients initially respond well to new treatments, they eventually become resistant to prolonged treatment. One hallmark of multiple myeloma is degradation of bones, which is a major problem for affected individuals. Bone morphogenetic proteins (BMPs) are signaling molecules that are able to inhibit the growth of cancer cells and have a positive effect on bones by reducing degradation. These signaling molecules bind to a receptor called ALK2 on the cell surface to initiate signaling and kill the myeloma cells. We were surprised to see that we could kill myeloma cells more efficiently when we lowered the expression of another BMP receptor called BMPR2. This finding was very striking and it means that a possible treatment for myeloma patients could be to lower the expression of this inhibiting BMP receptor. I want to investigate this further.

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

An ongoing challenge we have had during this project is to understand the mechanism of how BMPR2 can act as an inhibitor of signaling through ALK2 in our cell lines. Our paper presents a hypothesis, but we have not been able to show exactly how this happens. Elucidating the mechanism would give more clues to how we could treat myeloma patients through this pathway.

> "…we describe an effect that could be relevant in many different cellular contexts"

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

Yes! When I saw that we could more effectively kill cancer cells by removing BMPR2.

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

Journal of Cell Science was chosen because it is a renowned journal that we thought would be suitable for our manuscript, as we describe an effect that could be relevant in many different cellular contexts.

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

My PhD tutors Dr Toril Holien and Prof. Anders Sundan. They gave me the opportunity to work independently and taught me how to design and perform experiments. They are both hard-working researchers, which motivates you during difficult times in the project. Since I started my PhD they have taught me how to be a good researcher, how to interpret results critically and how to read and write scientific papers. Now, during my postdoctoral project, Toril is my supervisor, and she still has the ability to surprise me with her work capacity and broad knowledge.

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?

When I started my master's degree I didn't know much about research, the TGF-β pathway or multiple myeloma. I just knew that I wanted to learn lab techniques and perform experiments. After being in the research group for a couple of months, being around people with different knowledge and experience, and learning new techniques, I got increasingly excited about learning more and wanting to get answers to the unsolved questions. I then decided to do my PhD, and my mentors Toril Holien and Anders Sundan have inspired me to pursue a career in science.

What's next for you?

I have two years left of my postdoctoral position. I plan to continue my research on the TGF-β signaling pathway and multiple myeloma. I find this research really exciting, and there is a lot to learn and many unanswered questions.

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

Outside the lab, I spend my time with my kids and partner. We love hiking, being outside playing, riding bikes and enjoying nice weather. I also like to be social with my friends, baking and going to the gym.

Reference

Olsen, O. E., Sankar, M., Elsaadi, S., Hella, H., Buene, G., Darvekar, S. R., Misund, K., Katagiri, T., Knaus, P. and Holien, T. (2018). BMPR2 inhibits activin and BMP signaling via wild-type ALK2. *J. Cell Sci.* **131**, jcs213512.