First Person – Yutaka Takeda

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. Yutaka Takeda is first author on ‘The centriole protein CEP76 negatively regulates PLK1 activity in the cytoplasm for proper mitotic progression’, published in JCS. Yutaka is a PhD student in the lab of Daiju Kitagawa at the Graduate School of Pharmaceutical Science, The University of Tokyo, Japan, investigating the molecular mechanisms that ensure proper mitotic progression in cells.

How would you explain the main findings of your paper in lay terms?
Cancer cells undergo excess cell division during their proliferation stages. Polo-like kinase 1 (PLK1) is an essential regulator of cell division. Because it has been suggested that PLK1 activity is robustly linked to oncogenesis, PLK1 attracts the attention of biologists in a wide range of studies. In this study, we revealed that the centrosome, a structure present in animal cells, is important for the regulation of PLK1 activity. Our findings may explain how dysregulation of PLK1 activity, as observed in some cancer cells, happens.

Were there any specific challenges associated with this project? If so, how did you overcome them?
Since this paper is the result of the first project in my career, the whole process was quite challenging for me. However, the hardest challenge was demonstrating the biological significance of our findings. In the revision process, it was also one of the most crucial issues for our manuscript. We observed CEP76-knockdown cells from various points of view. Finally, we were able to reveal that depletion of CEP76 affects spindle orientation, which is very important for tissue morphogenesis, asymmetric cell division and stem cell self-renewal.

Have you had any significant mentors who have helped you beyond supervision in the lab? How was their guidance special?
Dr Chinen, one of the corresponding authors of this paper, taught me experimental techniques and scientific thinking from the beginning. To improve this project, he often discussed the research direction with me, which allowed me to acquire a sense of focus for my scientific work.

Who are your role models in science? Why?
I look up to Professor Kitagawa, the principal investigator of our laboratory, as a scientist, which is why I joined his laboratory. He enjoys science from the bottom of his heart and is open to discuss with us at any time. His scientific knowledge and his sharp insight have helped me several times. I would like to be a leader like him.

What’s next for you?
In order to contribute to our society, I would like to continue studying what I think is important and interesting, either in academia or industry.

Tell us something interesting about yourself that wouldn’t be on your CV
I love rock music, so I often go to rock festivals with my friends. However, they were all canceled this year due to the COVID-19 pandemic. I put up with not going to festivals by listening to my favorite songs by Japanese rock bands (such as ELLEGARDEN and Maximum the Hormone) in my room. I hope the day will come when we can go to festivals again and be excited without having to worry about anything.

Reference

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