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FIRST PERSON

First person – Midori Ishii

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. Midori Ishii is first author on 'Characterization of unconventional kinetochore kinases KKT10 and KKT19 in *Trypanosoma brucei*', published in JCS. Midori is a postdoc in the lab of Bungo Akiyoshi at Department of Biochemistry, University of Oxford, UK, she works on understanding the regulatory mechanisms of unconventional kinetochore proteins.

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

It is essential for all living organisms to pass on genetic information to their descendants. Chromosomes carrying genetic information are duplicated and then segregated during cell division. The kinetochore is an essential protein complex that is needed for chromosome segregation and its components are well conserved in many species. However, kinetoplastid species, including trypanosomes, do not have any well-conserved kinetochore proteins at all. We study kinetochore proteins in *Trypanosoma brucei* because it has a unique set of kinetochore proteins and it is intriguing that a completely different protein set can fulfil the same role as conventional kinetochores. So far, very little is known about the structure, function and regulation of these components, and it also remains unknown how they build kinetochores. To address these questions, we examined two essential kinetochore proteins, KKT10 and KKT19. We found that their main role is phosphorylating other kinetochore proteins and that they play an important role in the progression of cell division.

Midori Ishii

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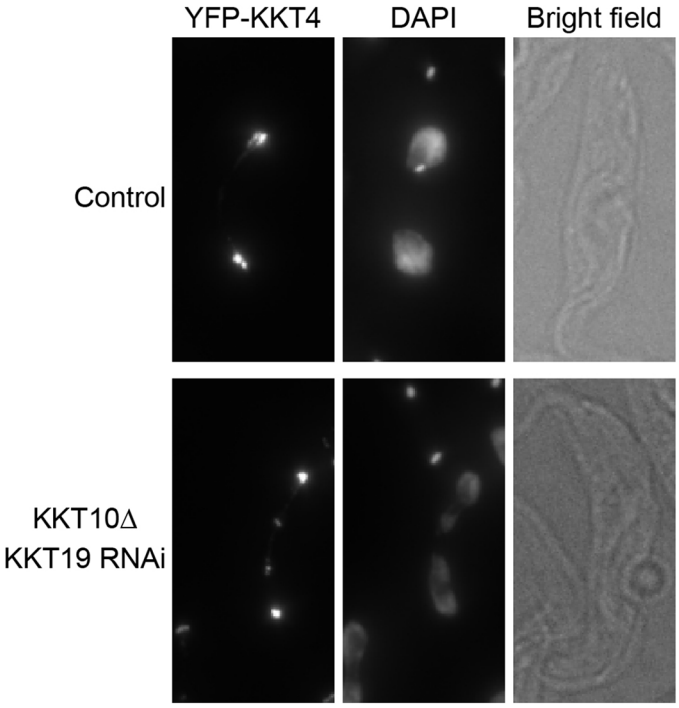

KKT10/19 depletion caused chromosome missegregation. YFP–KKT4 in *kkt10*Δ KKT19 RNAi cells.

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

I started this project by making deletion mutants in trypanosomes. I had not worked with trypanosome cells before, and I failed to get a deletion mutant many times. I just kept trying and finally became confident in making mutants. I think 'keep trying' is important for overcoming difficult situations.

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

We chose Journal of Cell Science because it publishes high quality of papers in the cell biology field.

What's next for you?

I want to try live-cell imaging of kinetochore proteins throughout the whole cell cycle. Live-cell imaging gives you spatiotemporal information of proteins and is a great method to analyze real protein dynamics. I believe live-imaging gives us new insights into trypanosome kinetochore proteins.

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

I have learned Japanese calligraphy (shodo) for nearly 20 years and finally obtained the title of master last year. Shodo clears my mind.

Reference

Ishii, M. and Akiyoshi, B. (2020). Characterization of unconventional kinetochore kinases KKT10 and KKT19 in *Trypanosoma brucei*. *J. Cell. Sci.* **133**, jcs240978. doi:10.1242/jcs.240978