

FIRST PERSON

First person – Maiko Yamamoto

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. Maiko Yamamoto is first author on 'The PRDM14–CtBP1/2–PRC2 complex regulates transcriptional repression during the transition from primed to naïve pluripotency', published in JCS. Maiko conducted the research described in this article while a Master course student in Yoshiyuki Seki's lab at Department of Biomedical Chemistry, School of Science and Technology, Kwansei Gakuin University, investigating epigenetic regulation of ESC pluripotency.

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

PRDM14 represses the differentiation of embryonic stem cells (ESC) through both the repression of differentiation-associated genes and the activation of pluripotent factors. However, the mechanisms of molecular switching, depending on the target genes, were largely unknown.

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

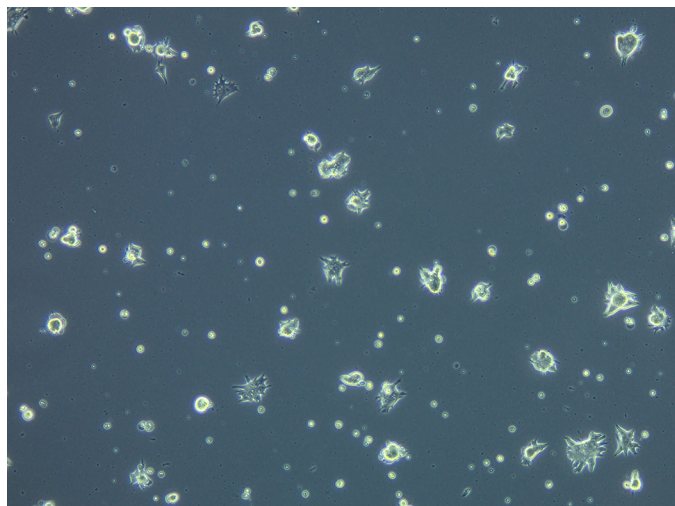
I needed to establish *Ctbp1/2* double knockout (DKO) ESCs to analyze the function of *CtBP1/2* in the PRDM14 complex using the CRISPR/Cas9 system. I didn't design the guide RNA for CRISPR/Cas9 correctly, and I could not obtain a knockout clone for over 2 months. Finally, I noticed my mistake in the design of guide RNA and succeeded to establish my first knockout ESCs!

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

My 'eureka' moment was when I obtained the positive results of genotype PCR to establish the *Ctbp1/2* DKO ESCs.

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

We often read papers published in Journal of Cell Science. One of my goals was to be accepted by Journal of Cell Science.



Ctbp1/2 DKO ESCs fail to form a dome-shaped colony in 2i plus LIF culture medium.



Maiko Yamamoto

Have you had any significant mentors who have helped you beyond supervision in the lab? How was their guidance special?

My supervisor Dr Seki and my seniors always help me to progress my research. Dr Seki discussed the data with me and helped me to proceed with my research. My seniors taught me the experimental techniques of molecular biology and cell biology from the basics.

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 was a high school student, I performed DNA electrophoresis for the first time. I was so excited by the visualization of the tiny DNA, and I felt that I'd like to watch other small, molecular events with my eyes.

Who are your role models in science? Why?

My role model is Dr Seki. It was exciting to see Dr Seki performing experiments and thinking about the research. His attitude toward the work is inspiring to me.

What's next for you?

After I graduated from the master's course at graduate school, I started working at a contract research organization. I had many opportunities to do presentations and felt my presentation skills were improved during the master's course in graduate school. I came to think that I would like to communicate with many people using my presentation skills.

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

I'm currently staying at home with my cats because of the COVID-19 pandemic. I've become entirely captivated by them.

Reference

Yamamoto, M., Suwa, Y., Sugiyama, K., Okashita, N., Kawaguchi, M., Tani, N., Matsubara, K., Nakamura, A. and Seki, Y. (2020). The PRDM14-CtBP1/2-PRC2 complex regulates transcriptional repression during transition from primed to naïve pluripotency. *J. Cell Sci.* **133**, jcs240176. doi:10.1242/jcs.240176