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FIRST PERSON

First person – Anchi Chann

First Person is a series of interviews with the first authors of a selection of papers published in Journal of Cell Science, helping researchers promote themselves alongside their papers. Anchi Chann is first author on 'Scribble and E-cadherin cooperate to control symmetric daughter cell positioning by multiple mechanisms', published in JCS. Anchi conducted the research described in this article while a PhD student in Sarah Russell's lab at Swinburne University of Technology, Hawthorn, Victoria, Australia. He is now a Research Fellow in the lab of Fotini Gounari at the Mayo Clinic, Scottsdale, USA, investigating fate-determining mechanisms in development and disease.

Anchi Chann

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

After a cell divides, the fate of its two daughter cells is intimately connected to their positioning. This positioning determines how tissues are patterned during development and how unhealthy cells are expelled from tissue to prevent cancer. The importance of this process has driven huge efforts for more than a century to understand the mechanism of daughter cell positioning. We know many of the molecular players, and we know that daughter cell positioning is regulated by orientation of the mitotic spindle and by remodeling of the membranes and adhesion complexes that are shared with neighboring cells. Here, we report that the tumor suppressors Scribble and E-cadherin control cell daughter positioning by non-canonical mechanisms.

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

As Scribble and E-cadherin both have well-defined roles, the challenge for me was to find a new biological context to explain some intriguing observations. By homing in on single-cell mitosis, we uncovered two stepwise complexes, called 'SEND' and 'SEAD', along with mitosis progression that appeared to have a role in the process under investigation. Although we liked the concepts, challenges of technical limitations and thesis deadlines meant we could not fully verify all aspects of these findings. Fortunately, I was supported by a scholarship extension to complete my investigations and I was able to advance this idea in my thesis. Meanwhile, for publishing my research, I learnt that less is more; I was able to extract the core of concepts to make the Journal of Cell Science story stronger.

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

Our manuscript grew from an initial observation by Dr. Ye Chen that Scribble was enriched at nascent junctions. Although later I consolidated the observation with some molecular requirements by using Scribble depletion in monolayer culture, for a while, I had been stuck to find a way to construct an exciting manuscript. A moment of breakthrough was when I prepared a very simple sample with a few MCF10A cells seeded on the glass to test time-lapse microscopy; I was surprised that the single-cell mitosis seems to follow some guidance on their own to pattern the cell division and losing functional E-cadherin or Scribble caused asymmetric daughter attachments. This 'eureka' moment paved the way for the subsequent observations to define the roles of Scribble and E-cadherin in cell division.

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

Our research aims at investigating the molecular roles of Scribble and E-cadherin in mitosis, which we hope will provide useful knowledge to many types of biologists (e.g. for cancer, molecular and cellular or even structural biologists). To this end, I believe Journal of Cell Science, from a not-for-profit organization, can provide this platform. Impressively, our preprint for this publication was selected by 'The Node' (https://thenode.biologists.com/april-in-preprints-5/highlights/#Cell) shortly after we posted our manuscript on BioRxiv. That definitely encouraged our submission to JCS.

Who are your role models in science? Why?

I have been very fortunate to be trained by many outstanding scientists, both for short and long-terms, in academic and industrial settings. Several long-term mentorships helped me a lot; I studied T cell immunology with Prof. Sarah Russell (PeterMac), phosphatase-kinase biochemistry with Prof. Tony Tiganis (Monash University), and centrosome biology with Prof. Tang K.

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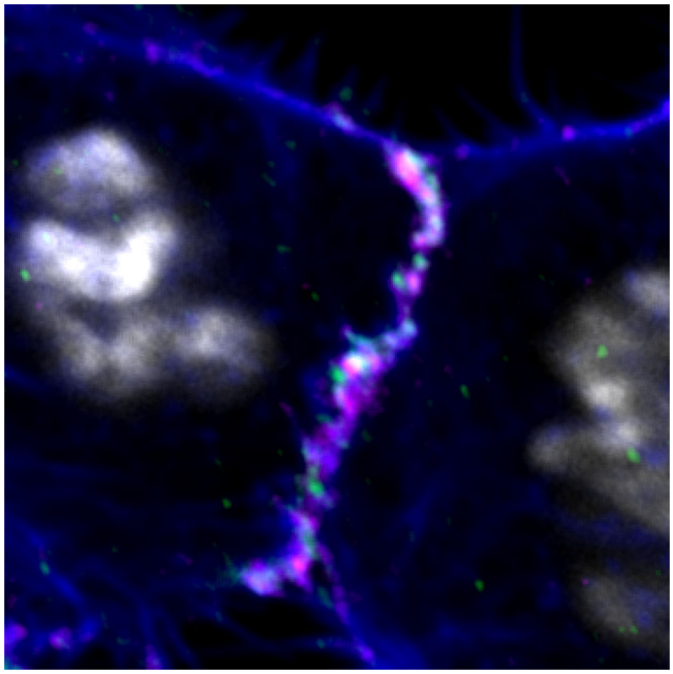

Tumor suppressor Scribble (magenta) and E-cadherin (green) are enriched at nascent junctions to maintain symmetric positioning of daughter cells.

Tang (Academia Sinica). All of my mentors are experts in their respective fields, and they are very keen to train students. My learning has always benefitted from their uniqueness. It's also worth mentioning that my first experience in studying mitotic spindle orientation was from an internship with Dr Matthieu Piel and Dr Nicolas Minc (Institut Curie) a long time ago. I do not think I will revisit this issue as part of my doctoral research. However, I have been inspired by their seminal publications a lot.

What's next for you?

At the time that this interview is being published, I might be moving to Mayo Clinic in Arizona for my postdoc research, supervised by Prof. Fotini Gounari. My new challenge will be to investigate T cells in the context of genetics and epigenetics.

Reference

Chann, A. S., Chen, Y., Kinwel, T., Humbert, P. O. and Russell, S. M. (2023). Scribble and E-cadherin cooperate to control symmetric daughter cell positioning by multiple mechanisms. *J. Cell Sci.* **136**, jcs260547. doi:10.1242/jcs.260547