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FIRST PERSON

First person – Jordi Lambert

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. Jordi Lambert is first author on 'ADAMTS-1 and syndecan-4 intersect in the regulation of cell migration and angiogenesis', published in JCS. Jordi conducted the research described in this article while a PhD student in Dylan Edwards's lab at the University of East Anglia, Norwich, UK. As a postdoc in the lab of Helle Jørgensen in the Division of Cardiovascular Medicine, University of Cambridge, UK, Jordi is now investigating how cell behaviour is influenced by interactions between the ECM, adhesion receptors and proteases.

Jordi Lambert

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

Cells are surrounded by a protein matrix, which provides structural and biochemical support. Cells need to be able to interact with this matrix in order to respond to their environment and perform essential biological functions, which they do in several ways. Adhesion receptors on the cell's surface allow for direct binding and interaction with the extracellular matrix. Cells also secrete proteases, which can degrade and remodel the extracellular matrix. One biological process dependent on cell-matrix interactions is angiogenesis, the process by which new blood vessels develop from the existing vasculature. Endothelial cells, the cells that line every blood vessel, proliferate and migrate upon the extracellular matrix, remodelling it as they go. We investigated an interaction between a protease, ADAMTS-1, and a cell adhesion receptor, syndecan-4, in endothelial cells, and found that they collaborate to inhibit cell migration and angiogenesis in an extracellular matrix dependent mechanism. These findings are important, as dysregulation of angiogenesis can contribute to diseases such as cancer, atherosclerosis and arthritis.

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

Syndecan-4 and ADAMTS-1 are both difficult to detect with antibodies, meaning we sometimes had to get creative with our experiments. For example, to visualise syndecan-4 via immunocytochemistry we had to use an HA-tagged syndecan 4 construct.

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

We had been struggling to identify how ADAMTS-1 and syndecan-4 inhibited cell migration, and had come to lots of dead ends; it wasn't related to the increased VEGF signalling we were also seeing, or to the altered integrin trafficking. The breakthrough came using a 'matrix swap' experiment, which revealed that ADAMTS-1 and syndecan-4 were altering the extracellular matrix, and this was how they affected migration. This felt like a really exciting breakthrough moment!

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

We chose the Journal of Cell Science as it is a well-respected journal, known for the quality of its publications, high ethical standards and transparent peer review.

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

My supervisor was a really helpful source of guidance and inspiration throughout the project.

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?

I always loved science, even as a child, which led me to study biomedical science for my bachelor's degree. While studying for this, I got the opportunity to take part in several lab projects, and I fell completely in love with research. Every day is something new, and you never know when you are going to get your next exciting development.

Who are your role models in science? Why?

The female scientists before me who paved the way for other women, and my peers, whose creativity and dedication are inspiring.

What's next for you?

This work came from my PhD, which I have since completed. I have now moved on to my first postdoc. I'm currently at the University of Cambridge, working on vascular smooth muscle cell plasticity in atherosclerosis.

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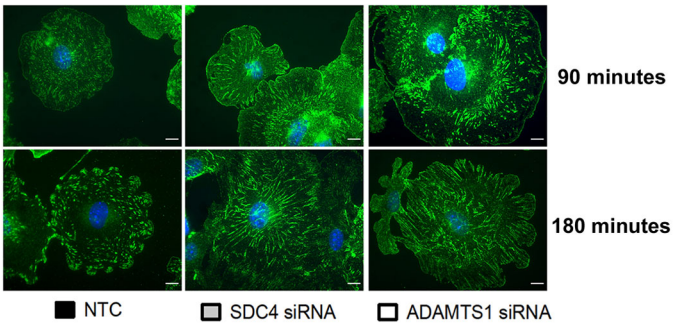

Endothelial cells treated with siRNA, fixed and stained for the adhesion receptor α5 integrin.

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

I'm a keen swimmer and spend as much time in the water as possible!

Reference

Lambert, J., Makin, K., Akbareian, S., Johnson, R., Alghamdi, A. A. A., Robinson, S. D. and Edwards, D. R. (2020). ADAMTS-1 and syndecan-4 intersect in the regulation of cell migration and angiogenesis. *J. Cell Sci*. **133**, 235762. doi:10.1242/jcs.235762