

FIRST PERSON

First person – Vasileios Papalazarou

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. Vasileios Papalazarou is joint first author on 'Collagen VI expression is negatively mechanosensitive in pancreatic cancer cells and supports the metastatic niche', published in JCS. Vasileios conducted the research described in this article while a PhD student in Laura Machesky's lab at the Cancer Research UK Beatson Institute, Glasgow, UK. He is now a postdoctoral fellow in the lab of Karen Vousden at the Francis Crick Institute, London, UK, investigating cancer metabolism, cell migration and metastasis.

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

Pancreatic tumours are characterised by a unique microenvironment, which is extremely dense, fibrotic, enriched by extracellular proteins and mechanically stiff. This increased physical stiffness of the pancreatic tumour microenvironment has been linked to disease aggressiveness and to a more invasive state of cancer cells. We discovered that pancreatic cancer cells not only respond to increased extracellular stiffness but are also influenced by loss of mechanical stimuli from the microenvironment. In particular, when sensing soft substrates, pancreatic cancer cells seem to express and secrete high levels of collagen VI, an important component of the extracellular matrix. This phenomenon could also be observed when cells were seeded on metastatic sites, where the tissue microenvironment has not been remodelled by tumour presence. Therefore, collagen VI in the metastatic niche could perhaps promote survival of cancer cells on distant sites and facilitate metastasis.

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

The main challenge was that I had moved to a different lab for my postdoc during revisions. However, I had wonderful support from the team of my PhD lab that contributed to the completion of this work.

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

I was initially surprised by the responsiveness of pancreatic cancer cells to substrate mechanical stiffness. This was not well understood at the time I started my PhD, as it had not been clearly demonstrated that transformed cells can sense and respond to variations in extracellular matrix stiffness. Secondly, I was surprised that collagen VI, not a typical collagen but an essential component of the extracellular matrix, can be deposited in the metastatic niche by cancer cells. Pancreatic cancer cells seem able to support their seeding in the liver microenvironment by secreting this extracellular matrix component. Interestingly, in liver metastases formed by collagen VI-knockout cells, this supportive role seems to be taken



Vasileios Papalazarou

by stromal cells that deposit excessive amounts of collagen VI around the metastatic region. Thus, collagen VI might be an important player in the metastatic niche and can have different sources of origin.

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

Since my early student years, I have appreciated the role that Journal of Cell Science has in the cell biology community – not only in publishing high-quality research studies, but also for the very thorough and interesting review articles and the 'Cell Science at a Glance' series.

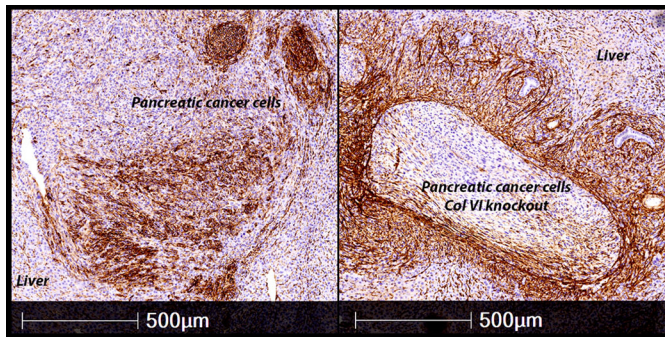
Have you had any significant mentors who have helped you beyond supervision in the lab? How was their guidance special?

In addition to experimental skills, I have gained a lot regarding both scientific and life skills in general, not only from all the people that have supervised me, but also from my co-workers in all the different environments I have been in so far, and especially from Professor Laura Machesky, who supervised me during my PhD and this study; I learned to think critically and to follow my interests.

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?

It might sound cliché, but I expressed an interest in becoming a biologist since primary school. I am fascinated by the mechanisms of life and how they can be applied to improve human health.

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Collagen VI deposition in liver metastasis formed by pancreatic cancer cells (left) and by collagen VI-knockout pancreatic cancer cells (right).

Just following these interests has brought me to where I am now and will keep guiding me in the future in whatever role I pursue.

What's next for you?

I recently started my postdoctoral position at the Francis Crick Institute under Karen Vousden's supervision, and I am excited for the projects I will be undertaking here.

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

In my free time I read books, collect records and play the piano.

Reference

Papalazarou, V., Drew, J., Juin, A., Spence, H. J., Whitelaw, J., Nixon, C., Salmeron-Sanchez, M. and Machesky, L. M. (2022). Collagen VI expression is negatively mechanosensitive in pancreatic cancer cells and supports the metastatic niche. *J. Cell Sci.* **135**, jcs259978. doi:10.1242/jcs.259978