

## FIRST PERSON

# First person – Ebtissal Khouj

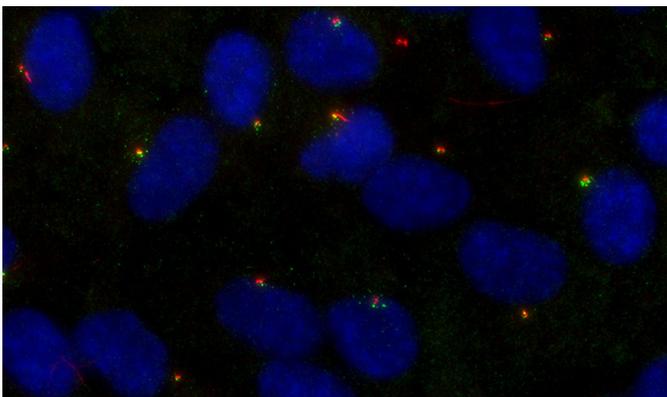
First Person is a series of interviews with the first authors of a selection of papers published in Journal of Cell Science, helping early-career researchers promote themselves alongside their papers. Ebtissal Khouj is first author on 'Differential requirements for the EF-hand domains of human centrin 2 in primary ciliogenesis and nucleotide excision repair', published in JCS. Ebtissal conducted the research described in this article while a PhD student in Prof. Ciaran Morrison's lab at NUIG, Galway, Ireland. She has now just graduated from the lab, where she investigated DNA damage, and related cell signaling pathways.

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

The human body is made up of trillions of cells. The vast majority of these cells contain a nucleus, cytoplasm and a centrosome. The centrosome is made up of several proteins and centrin 2 is one of them. Centrin 2 has a special structure that allows it to bind to  $\text{Ca}^{2+}$ . There are two main roles of centrin 2 within the cell. First, centrin 2 is found to be associated with centrosomes. Second, centrin 2 is required for efficient DNA damage recognition in the nucleotide excision repair (NER) pathway. My supervisor and I wanted to know and to understand whether there is a relation between centrin 2 structure and its functions. We discovered that centrin 2 is functionally dependent on its structure for its roles at the centrosome but not for its NER activity, suggesting these functions are separable and that centrin 2 plays distinct roles in these processes.

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

An ongoing challenge we have had during this project was to understand the structure and the functions of centrin 2. It took months to generate eight stable cell lines and analyse their phenotype in detail. This involved long hours at the microscope, cell culture and hundreds of western blots.



Immunofluorescence microscopy analysis of CP110 (green) after 18 h serum starvation using acetylated tubulin (red) as a cilia/centriole marker.



Ebtissal Khouj

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

Yes! When I saw my clear immunoprecipitation result on centrin 2 interactions.

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

Journal of Cell Science was chosen because it is a renowned journal that we thought would be suitable for our manuscript, as we describe an effect that could be relevant in many different cellular contexts.

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

My supervisor, Prof. Ciaran Morrison. He gave me the opportunity to work independently and taught me how to design and perform experiments. Since I started my PhD he has taught me how to be a good scientist, how to interpret results critically and how to write and read scientific papers.

### What's next for you?

I plan to continue my research on DNA damage and cell signaling pathways. I find this research really exciting, and there is a lot to learn and many unanswered questions.

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

I like to travel and sometimes I am lucky to visit places where I have never been before. I am interested in learning about new cultures and languages. I also like cooking, baking and going to the gym.

**Reference**

**Khuj, E. M., Prosser, S. L., Tada, H., Chong, W. M., Liao, J.-C., Sugawara, K. and Morrison, C. G.** (2019). Differential requirements for the EF-hand domains of human centrin 2 in primary ciliogenesis and nucleotide excision repair. *J. Cell Sci.* **132**, jcs228486. doi:10.1242/jcs.228486