

FIRST PERSON

SPECIAL ISSUE: CELL BIOLOGY OF LIPIDS

First person – Dolma Choezom

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. Dolma Choezom is first author on 'Neutral sphingomyelinase 2 controls exosome secretion by counteracting V-ATPase-mediated endosome acidification', published in JCS. Dolma is a PhD student in the lab of Professor Dr Julia Christina Gross at Universitätsmedizin Göttingen, Germany, investigating the molecular mechanisms that underlie membrane vesicle trafficking processes.

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

Cells constantly communicate with other cells – both proximal and distal – by exchanging signaling-active materials. Exosomes, which are nano-sized vesicles packed with a distinct cargo of lipids, proteins and nucleic acids, are released by virtually every cell type. Exosomes released by cancer cells carry signals that contribute to cancer progression. Therefore, it is important to study the formation of exosomes at the molecular level, including how cells load these special cargoes for secretion. Here, we show that an enzyme called neutral sphingomyelinase 2 (nSMase2) regulates a pivotal step in exosome formation by counteracting V-ATPase-mediated endosomal acidification.

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

Not a 'eureka' moment per se but rather a 'wow' moment was when invisible exosome pellets gave beautiful protein bands on the western blot.

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

Journal of Cell Science is renowned for publishing robust scientific studies for a wide audience of scientists. Moreover, JCS being one of the affiliate journals in the Review Commons initiative makes the journal submission very fast.

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

My PhD supervisor, Professor Julia Gross. In addition to her scientific supervision on the project, her openness for discussion and suggestions, her positive outlook on things, and her passion for scientific research immensely influenced the way I approach scientific questions and problems.

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?

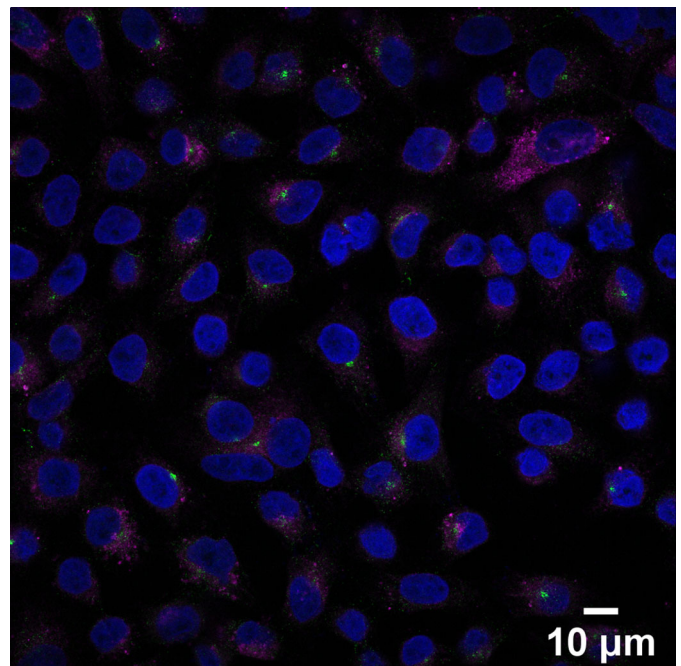
I remember enjoying my science classes, especially biology, since middle school. I like how science gives logical and rational answers

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Dolma Choezom

to almost all the questions that life has to offer. The most interesting moment in life that led me here is when I got the opportunity to come to Germany to pursue a bachelor's degree in biochemistry and cell biology.



HeLa cells stained for the small extracellular vesicle marker CD63 and the lysosomal marker LAMP1. DNA was stained with DAPI.

Who are your role models in science? Why?

I do not have one person in particular. I usually draw inspiration from people around me. Julia, my PhD supervisor, and my other colleagues: Mona, Karen, Leonie and Pradhira. Their willingness to help, good problem-solving skills and high team spirit created a very nice working atmosphere, which inspired me daily.

What's next for you?

I would love to continue in research as a postdoctoral researcher after my PhD, and I am starting to look for positions in Germany.

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

I come from Tibet, therefore I do harbor strong connections to mountains. I love hiking!

Reference

Choezom, D. and Gross, J. C. (2022). Neutral sphingomyelinase 2 controls exosome secretion by counteracting V-ATPase-mediated endosome acidification. *J. Cell Sci.* **135**, jcs259324. doi:10.1242/jcs.259324