

Everything started in my secondary school. I used to take part in biology competitions at school, than I was selected to present Ukraine on the International Biology Olympiad in Singapore, 2012.

Initially I chose biology because it gives answers for questions about living creatures and me too. It teaches us not only to remember the set of facts, but also to think, to investigate, to do experiments. By nature I like to dig to the basis of the cause and biology is the science, which allows me to do this every day. Except it I am really fond of biology because it includes chemistry, physics, math, programming, it is very multifaceted.

I really think that Biology has no uninteresting fields and areas (of course, it can be too complicated) Studying biology at university I marvel by each field because every subject is useful. But if I have to choose, I prefer molecular physiology and cell biology. Molecular physiology for me is a way to help people, to save lives by investigating the deep causes of diseases (even if you are not a doctor and you cannot do it directly.).

At my home research institute I am engaged in an investigation dedicated to non-canonical functions of telomerase in heart pathology. I have started from measuring expression of two telomerase subunits in control and after anoxia-reoxygenation experiments on neonatal rat cardiomyocytes and now I came to mitochondrial potential and telomere length measurements (using qPCR and FISH) on this model.

Talking about cell biology I am pleased to look on the cardiomyocytes under the fluorescent or confocal microscope, to apply different staining and then analyze images using computers, by teaching it how to differentiate the cells and organelles within it.

Eventually I understood that all these methods, singly, cannot answer on the main question (telomerase role in heart pathology). In this way I come up with systemic approach. My friend and I decided to develop a plan how we can evaluate the cardiomyocyte functionality at anoxia-reoxygenation model and telomerase impact on it using system biology.

We would like to determine such parameters as cell death (using Hoechst and Propidium Iodide dye), mitochondrial functioning (using potential sensitive dyes Mitotracker or JC1), translation efficiency (using FRET measurement between mTOR and eIF3), proteasomal proteolysis, autophagy level, DNA preservation (by measuring DSB with TUNNEL or comet assays), telomere length and contractile ability of cardiomyocytes at the same time.

Although I have started doing this plan by very small pieces, I lack necessary skills and experience, reagents and time to fulfill it while being Bachelor's student.

That's why I have chosen VBC. For me it's not only an opportunity to visit such beautiful country as Austria and its capital Vienna or meet friends from every corner of the world, but a unique chance to acquire necessary skills and experience as well as get a practice in report writing and presenting your ideas, which is such important for acquiring Bachelor diploma and other degrees. I would like to study state-of-the-art imaging techniques and automated cell phenotyping in the laboratory of Daniel Gerlic, accomplish an RNAi screen Jürgen Knoblich's laboratory or try 4D confocal live-cell imaging at Kikue Tachibana-Konwalski laboratory. I hope my dream will come true!