Name of the MSC Fellow: Katarina Trajković, PhD
Nationality: Serbian
Host organisation: Mediterranean Institute for Life Sciences
Country of the Host: Croatia
Project Acronym: CarboPore
Project start and end date: 01.04.2020 – 31.03.2022
Type of MSC action, H2020: IF

Your story:

Project objectives and research field:
In this project, we are investigating a mechanism through which aggregates formed by oxidatively damaged, carbonylated proteins lead to age-related cellular dysfunction. We are testing a novel angle to aging research, namely a hypothesis that carbonylated protein aggregates exert their toxic function through interactions with cellular membranes and subsequent disruption of membrane integrity.

Tell us why your topic is important and/ or how it brings to advancement in your research field:
Healthy aging is one of the most important goals of contemporary society from medical and economical perspectives. Despite tremendous efforts to identify the root cause of aging, the molecular basis of physiological aging remains largely obscure. This project tests an original hypothesis that oligomers formed by carbonylated proteins affect the integrity of cellular membranes. If confirmed, the proposed scenario could
provide simple and direct, yet previously unexplored link between protein carbonylation and age-related cellular deterioration, which could potentially explain aging in all organisms and cells, regardless of the cell type or mitotic status. Establishing the link between protein carbonyl content and membrane damage could lead to the development of a simple experimental system for testing the efficiency of various anti-aging drugs which would rely on measuring permeability of cellular or artificial membranes.

**What are the benefits of participating in an MSC action?**
This is a highly interdisciplinary project involving multiple advanced experimental approaches that will enrich expertise not only of the MSC fellow, but of all the researchers involved in the CarboPore project with the ultimate goal to understand aging and to set base for attenuating aging. Importantly, the project entails an inter-sectoral aspect due to our link with a biotech company which provides opportunity for immediate application of the research. We hope that discoveries from the CarboPore project would allow for a development of relatively rapid (independent of the intrinsically slow aging process) screen of candidate drugs and identification of novel anti-aging agents.

**Did you encounter any challenges during application/ implementation and did you get any help?**
MSCA individual fellowships call is a highly competitive process. However, national and EU support in preparation of the grant proposal is well established, providing detailed Guide for Applicants and competent national contact point networks. I have also attended a workshop provided by the European Commission in Zagreb where I got helpful advice and instructions for a successful application. Members of the host institution, especially the mentor Prof. Miroslav Radman assisted in finding the attractive and promising research path and offered support in proposal preparation.

**Why did you choose a widening country as a Host? What was the reason that convinced you? What is making you professionally happy here?**
I chose Croatia as a host country primarily because of the exceptional scientific quality of the mentor Prof. Miroslav Radman. Also, the host institution is in a beautiful location, offering high quality of life at and outside of work. After many years far from home, I preferred to work closer to Serbia where I have my family. This allows me to be with my family more often than before, giving me a better balance between private and professional life. Also, professional ties with Serbian and Slovenian partners have been rapidly established as we share similar cultural backgrounds.

**Would you recommend others to apply? What useful advice/ tips can you give them?**
I would strongly recommend other researchers from Croatia to apply for this fellowship since MSCA individual fellowships are recognised as a symbol of excellence.
which can open new career paths during and after the fellowship. Candidates should be prepared to invest substantial time and effort in preparation of the application. Following the instructions and other resources, as well as careful and thorough editing of the proposal are essential. I would advise future applicants to discuss with successful applicants from previous calls.