ITC CONFERENCE GRANT
SCIENTIFIC REPORT

This report is submitted for approval by the grantee to the MC Chair.

Action number: CA15203
Conference title: Emerging Concepts in Mitochondrial Biology
Conference start and end date: 04/02/2018 to 08/02/2018
Conference attendance start and end date: 04/02/2018 to 08/02/2018
Grantee name: Adela Krajcova

ACTIVITIES DURING YOUR ATTENDANCE AT THIS CONFERENCE:

At 4th till 8th of February, 2018, I took part in Emerging Concepts in Biology, in The David Lopatie Conference Center, in Weizmann Institute in Rehovot, Israel. I attended lectures of invited speakers and short-talks, as well as poster sessions. I arrived on the first day of conference and I visited lectures about mitochondrial proteomics. Second day I attended presentations concerning mitochondrial carriers and channels. I went through poster session and look at at least 30 posters of young colleagues – PhD students and postdocs - and tried to discussed with them mainly the methods they had used to obtain the results in their projects and studies. The third day, the morning session was really close to our research area, as all speakers concerned on mitochondrial metabolism. The rest of day (in the afternoon) I joined the group and had a short visit and dinner in Jerusalem, which was organized by Organizing committee. Besides, this helped me to get known better at least some of the participants of the conference and get scientific contacs for future. We continued next day with mitochondrial communication. This day I also presented my work during other poster session and answered the questions about the methods of my project – mainly about high-resolution respirometry oxygraph O2-k Oroboros, or Seahorse XF 24 Flux Analyzer as well as the method of isolation the cells from human biopsies and its cultivation. I presented there my PhD topic which is focused on pharmacology of commonly used drugs and its possible impact on mitochondrial metabolism – to be more detailed in my PhD project I chose anaesthetics propofol which is widely used and can cause the rare adverse effect with more than 50% mortality, usually occurring in children. It has no specific treatment, and the mechanism is based on mitochondrial damage. This fatal adverse effect is called “Propofol Infusion Syndrome”. In Israel, I met physiacians (mainly Pediatrics and doctors of Internal medicine) who were very interested about its mitochondrial origin. On the other hand, I believe that my work could be inspirative for people doing also basic research, who would like to do mitochondrial toxicology and screen other drugs or toxic agents and its impact on mitochondrial function. Some people asked me about the way how to screen possible influence and we discussed if my experiments could be used as a model for other agents. Last day of conference, I took part in the last session mainly about genetic analysis in mitochondrial function or stress response in mitochondrial disease and I left Rehovot and took my flight home.

IMPACT ON YOUR RESEARCH AND FUTURE COLLABORATIONS (if applicable)

I am working in the research group which still does not have a long tradition, at the Medical Faculty, at Charles University in Prague. Our lab was established only couple of years ago and I am one of the first people who had a chance to do PhD programme in mitochondrial research at our faculty. To be honest, we are focused mainly on mitochondrial physiology and metabolism, and our methods are established on

high-resolution respirometry (Oxygraph O2-k, Oroboros) and Seahorse XF 24 Flux Analyzer. We can work with other basic research techniques as e.g. spectrophotometry or PCR. The opportunity to go to international conference somewhere abroad provided me a chance to broaden my knowledge.
I wanted to visit this conference mainly to try to better understand other methods and other opportunities how to study mitochondria. At least, I would like to applicate some of them on my own research in future – for example one of the most interesting and very beneficial area for me was imaging methods of mitochondria, their fussion and fission, morphology, integrity or fragmentation etc. which some speakers presented on photos and videos. I believe I better understand now to some of the princips and I could observe if, for example, my drug could influence mitochondria in other way than I investigated until now (mostly mitochondrial metabolism). Since our research group is rather smaller and only one dealing with mitochondria at our institution, lectures of speakers from other labs and research centres from so many countries gave me an overview, in which area it is possible and could be interesting to focus on. I appreciate that in the conference I had a chance to discuss my research with experienced scientists who tried to give me some ideas how to continue in this topic. I am also very glad that I got known some people (mostly PhD students and young investigators) who shared with me their own experiences and troubleshooting with some methods - during coffee breaks or dinner. Some of them (from Italy, Austria, Lithuania and Poland) shared with me even their protocols and adviced me how to perform the experiments. I am still in contact with them trying to discuss other problems, and on the other hand, to provide them advices about our techniques. During poster session I also got known an information about the newest versions of some methods and possibility to upgrade some of our techniques, which had been recently developed and now offer the better functions for our measurements.