



Supervisor' review of dissertation thesis by Jiří Týč

It was quite surprising when I realized recently that Jirka is a member of our lab for incredible 9,5 years. He walked in as a first grader and stayed with us until now. I hope he does not regret it. When he joined, we were a small lab with limited resources poking in different directions. Jirka started working on functional analysis of an obscure protein YCF45, and that way learned a rather wide spectrum of both basic and advanced molecular biology methods, later complemented with immunofluorescence and both transmission and scanning electron microscopy.

YCF45 is a protein that emerged in tryps by horizontal gene transfer and we were hoping to find it in some tiny relict plastid, but that did not materialize. Undaunted, he jumped on prohibitin, and with the help of others was able to stitch a nice story out of it. Both studies gave him first-author papers at a quite early stage.

Since Jirka likes traveling, he realized that additional justification of this passion can be found in collecting insect trypanosomatids. As with other things, he soon became pretty good at it, and started bringing infected bugs and flies from Turkey, Armenia, Sicily and probably elsewhere. In fact the number and diversity of flies was so extensive that we were able to perform first dedicated phylogenetic and comparative analysis of their trypanosomatids, which was well accepted by the narrow field of those interested in these critters.

Yet Jirka new that this topic was rather a hobby, that his supervisor expected from him more demanding project. At that time, we were a bit lost what strong topic to find and Jirka was more on his own than a typical PhD student in the lab. He found out that little is known about mitochondrial chaperones in tryps, and wanted to look for a connection between them and the kinetoplast, which he became interested in. That turned out to be difficult because it was outside of the standard field of interest of our lab, we did not have many required methods established, but Jirka did not care about that. He started single handedly to poke into the functions of several chaperons, and after some frustration it started working. He described the function of these conserved proteins in *T. brucei*, providing a clue about their function in most of the eukaryotes including humans. Another topic became mitochondrial translation, and again, he is looking for connections with homologous process in the human mitochondrion.

This is reflected by his four first author papers that were published in respectable journals *Mol. Biochem. Parasitol.*, *Int. J. Parasitol.*, *Mol. Phyl. Evol.*



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and *mBio*. Jiří also made a valuable contribution to two reviews, one on the *T. brucei* mitochondrion in *Int. Rev. Cell Mol. Biol.* And the other one on the phylogeny and evolution of kinetoplastid flagellates in *Mol. Biochem. Parasitol.* It is highly unusual that a student would have that many publications on such different topics, which among other things illustrates that Jirka is able to get easy and efficiently into new projects. Jiří proved himself to be a very promising young scientist as he was able to win already two grants for PhD students at the University of South Bohemia and, much more importantly, an EMBO short-term fellowship to cover his stay in Michelle Klingbeil's laboratory. During this stay, he not only learned new and difficult methods, but also executed them properly, and used them as a backbone of the *mBio* paper.

Jiří was also supervising one Czech bachelor and an Austrian master student's project. Jiří was always active during our weekly lab meetings, was keen to learn new techniques and approaches, is very good in communication with other lab members on a daily basis, learned to solve problems, designing experiments, share equipment, chemicals etc. He has an interest in a wider view of the field that leads him to explore a topic from various perspectives. At the same time, he is able to wrap the projects up and does not let them unfinished. Jirka is an active member of the Czech Society of Protistology as he himself responsibly and with a lot of effort organized one of its annual meetings, with over 70 participants.

One of latest pleasant surprises was when I was approached by a group of strangers at the Woods Hole meeting few weeks ago, who turned out to be the whole lab of Michelle Klingbeil. They started describing to me, one over the other, how exciting it was to have Jirka around. It was very spontaneous and enjoyable and showed that Jirka left there a nice mark.

I would like to state that the presented dissertation thesis fulfils, according to my opinion, all postulations and I recommend it to be accepted as a partial fulfillment of the requirements for the degree of Doctor of Philosophy at the Faculty of Biology of the University of South Bohemia.

Thanks Jirko for your friendship and great work.

May 18, 2015 in České Budějovice



Julius Lukes