

Supervisor's review of the thesis
"Testing the synteny of genes in *Yponomeuta evonymella*"
by Bc. et Bc. Veronika Běhálková

When Veronika came to our laboratory looking for a topic for her master thesis she had rather bold idea. She told me she would have liked to have some personal life. So I came up with a topic which I considered routine and not so demanding. I could not have been more wrong...

Veronika was tasked with BAC-FISH mapping of genes to test for conserve synteny and gene order between representatives of two sister families of moths, *Yponomeuta cagnagella* and *Plutella xylostella*. I was interested whether it would be feasible to use the *P. xylostella* genome as a reference for assembly of *Y. cagnagella* genomic sequence. The methodology involved primer design and PCR screening of *Y. cagnagella* BAC library, propagation of selected BAC clones and extraction of their DNA, and eventually construction of probes and their hybridization to chromosomes. Most of the work was done under the supervision of my PhD student, Irena Provaznikova, who was so kind and provided me following evaluation:

"Although Verunka came to our group from a laboratory focused on different topics and techniques, she adapted very quickly to the new environment, her new topic and us. As Verunka's co-supervisor, I introduced her to all the protocols, methods and techniques required by her project. Thanks to her incredible enthusiasm, energy, intelligence, determination, a little intimidating time management skills and positive attitude which lasted almost to the end, she managed to learn everything very fast. So, soon, maybe too soon, she became independent and almost did not need me which made me feel quite expendable but also very proud because it is a sign of a great student."

I stepped in when Veronika started losing her positive attitude as she repeatedly tried to hybridize the probes to chromosomes with no success. Our protocols stopped working and we started systematic optimization of labelling and in situ hybridization protocols to eventually learn that for reasons unknown we could not have stopped DNase I in the nick translation labelling reaction by any standard means. This was later topped by technical issues with a fluorescent microscope which needed new set of filters. Yet Veronika persisted and prevailed. But then there was not much time left for writing of the thesis, which was done by her decision in English. This resulted in few more nerve-wracking weeks during which Veronika completely lost her positive attitude. No surprise there. But I was really surprised and pleased by quality of the result. Unlike with other students, there was not time for extensive revising and polishing of the text. Yet it withstood the scrutiny of reviewers. Through all that ordeal, Veronika remained friendly and always ready to help other students and members of our lab. We would like to thank her for her dedication and all the fun and wish her all the best in her future project.

Conclusion

The present thesis by Bc. et Bc. Veronika Běhálková in my opinion fulfils all requirements and I recommend it for successful defence.

On January 23, 2020, in Levín


Petr Nguyen