



**Supervisor's opinion on the occasion of defence of the PhD dissertation thesis**

**Student: Mgr. Roman Skokan**

**Supervisor: RNDr. Jan Petrášek, PhD**

Roman Skokan from Prague is under my supervision already from his bachelor studies. When he came to me for the first time, he mentioned that he would love to challenge the evolutionary origins of auxin transport, which I bravely released as the bachelor literature summary topic now ten years ago; this all with a hope that we could perhaps approach this topic experimentally. Roman also immediately mentioned that he might be understood by some people as a stranger, thanks to his very special sense of black humour. This attracted my attention even more and we started to collaborate.

It appeared that Roman is indeed very interested in the evolution, and during his master studies, he successfully introduced several selected strains of algae and also uncovered numerous pitfalls connected with their experimental utilization. At that time, there were only a few reports on the existence of homologs of auxin carriers in some streptophytes and some limited experimental evidence on the role of auxin in these organisms in general. We knew that it would be very difficult to apply a toolbox of molecular biology we normally use in our favourite models like tobacco or Arabidopsis. The challenge that has been ahead of Roman at the beginning of his PhD studies was to address experimentally the role of auxin transport across the plasma membrane in streptophytes. The idea was to adopt auxin transport assays that we have very well established in the lab for cells of higher plants for their use in algae, to clone homologs of auxin transporters, to prepare various constructs for their expression in algae as well as in the heterologous models of higher plants and to conclude if there might be a physiological relevance of carrier-based transport in algae. A difficult, very challenging task, undoubtedly.

I am very happy that a significant part of our plans was possible to elaborate at least to the extent that allowed to be conclusive to a certain level. Like this, it was possible to conclude that carrier-mediated auxin transport emerged already in streptophyte algae and that native auxin (IAA) itself has morphoregulatory effects in algae cells. However, the impact of Roman work is broader. In past years, especially before covid has restricted a plenty of gatherings, Roman was very active in the fresh water algae community and he significantly contributes to the establishment of algae models for their use in molecular biology. He also spent some time in the foreign laboratories (Prof. Buschmann, University of Osnabrueck, Prof. Sekimoto, Japan Women's University, Tokyo). Without any doubt, Roman's influential work and enthusiasm allowed our team to receive a grant from Czech Science Foundation, which is now in progress.

We are now in the last phases of the preparation of two original contributions that need to be finished, but more importantly, Roman is now ahead of the post-doc time of his scientific carrier. He has several options for these stays and I will do my best to support his applications cordially and recommend his expertise. I would like to wish Roman the best and I hope he will become an independent researcher in the near future.

Prague, September 9, 2021

RNDr. Jan Petrášek Ph.D.