

Supervisor's report - dissertation defense: Viriyanata Wijaja, M.Sc.

Viriyanata Wijaja received his Master's degree (M.Sc., Pharmacy) in 2014 from Padjadjaran University, majoring in Herbal Medicine, Indonesia, culminating in his thesis: (*Goniothalamus macrophyllus* Hook. f. & Thomson.), as a medicinal plant for the Punan tribes of Dayak in east Borneo.

He joined the PhD programme in Pharmacognosy and Nutraceuticals at the Faculty of Pharmacy, Charles University in Hradec Králové on the 1st of October 2019. The topic of his dissertation, designed in collaboration with Dr. Chlebek, was Plant metabolites and their influence on neurodegenerative processes, part V. Alkaloids of *Nuphar lutea* L.; Dr. Chlebek served as the student's advisor. The choice of topic was my mistake; I only later found out that it was difficult for the student because, from previous studies, he did not know the special phytochemical methods common in the workplace nor the necessary instrumentation. Indeed, the detection (and isolation) of alkaloids from *Nuphar lutea* is challenging and requires some prior experience. After a year of activity, Dr. Chlebek announced his resignation as a consultant, and Wijaja became my PhD student again. So, I chose a new topic without a consultant: Alkaloids of *Dicranostigma franchetianum* (Prain) Fedde and their selected biological activity. Preliminary tests have indeed shown that the alkaloid extract shows high inhibitory activity against AChE and BuChE, which may be the source of some benzo[c]phenanthridine alkaloids and, moreover, isoquinoline alkaloids are well detectable. The student processed this extract and obtained 21 alkaloids, which were subjected to biological activity studies with interesting results.

The second complication was the fact that he was recalled to military training for a few months at the turn of 2022/2023, and at the same time by his employer (Viriyanata Wijaja will be a civil servant with an obligation to meet certain civil service criteria and therefore had to switch to a combined form of study). This intervention has deprived him of 6 months of additional doctoral study beyond the normal time (as a result of COVID-19). He planned to spend half a year isolating additional alkaloids and sanguinarine for future semi-synthetic studies.

The student has passed all examinations according to the study plan: English Language (2019), Phytochemical Isolation Methods (2020), Selected Instrumental Methods (2020), Pathobiochemistry (2021) and the State Doctoral Examination in Pharmacognosy and Nutraceuticals (2022). During his studies, he regularly participated in Postgraduate and PostDoc scientific conferences as part of the presentation of the Faculty of Pharmacy. In accordance with the regulations of the Faculty of Pharmacy, he is the author and co-author of two papers in the impacted journals.

In the activities of the PhD student, it turned out that most of his focus is rather theoretical. This occasionally led to entropic situations between him and me in the lab, but not antagonistic ones. He has tried very hard to master the methodology of phytochemical work, especially manual, non-instrumental work, and I am convinced that he has succeeded to a recognisable degree. He was calm, quiet, and well-received in the department. He did a lot of work in his two years in the laboratory, which will continue with the alkaloids of this plant.

For these reasons, as the supervisor of a PhD student, I have concluded that I see no reason that would preclude the defense of his PhD thesis.

Prof. RNDr. Lubomír Opletal, CSc.
Supervisor

Hradec Králové, September 27, 2023