



CHARLES UNIVERSITY  
Faculty of Pharmacy  
in Hradec Králové

## Report on defence of dissertation thesis

Academic year: 2024/2025

**Student's name and surname:** Vinod Sukanth Kumar Pallabothula  
**Student's ID:** 50347619

**Type of the study programme:** doctoral  
**Study programme:** Pharmaceutical Chemistry  
**Study ID:** 644587

**Title of the thesis:** Synthesis, development and biological evaluation of new antimicrobial compounds  
**Thesis department:** Department of Pharmaceutical Chemistry and Pharmaceutical Analysis (16-16190)

**Language of the thesis:** English  
**Language of defence:** English  
**Supervisor:** doc. PharmDr. Jan Zitko, Ph.D.  
**Reviewer(s):** doc. PharmDr. Oldřich Farsa, Ph.D.  
doc. PharmDr. Mgr. Martin Krátký, Ph.D.

**Date of defence:** 05.11.2024    **Venue of defence:** Hradec Králové  
**Attempt:** regular

**Examination proceedings:** The PhD candidate Vinod S. K. Pallabothula (further referred to as Candidate) was introduced to the Board. Mentor doc. Jan Zitko then read his Supervisor's Evaluation of the Candidate, where he pointed out the fulfilled obligations of the study plan, including the interim exams, the state doctoral exam, grant applications, placement abroad and publication activity. Using a PowerPoint presentation, the Candidate introduced the Committee to the key results of his doctoral thesis. In the introductory section, he focused on the topic of tuberculosis, antimicrobial resistance and a brief introduction to the specific subcellular antimycobacterial targets (prolyl-tRNA synthetase - ProRS, methionine aminopeptidase, aspartate decarboxylase). Then, he commented on his publications, focusing mainly on P1 and P2, which deal with ProRS inhibitors. He described the design rationale of the 3-aminopyrazinamide derivatives and thoroughly described the structure-activity relationships he discovered in this project. At the end of the presentation, the student outlined possible directions for future research. After the presentation, doc. Martin Krátký read his opponent's evaluation. Then, the opponent's evaluation by extramural opponent doc Farsa was read by doc. Miletín (as doc. Farsa was excused for his teaching duties). Evaluations by both opponents were generally positive and recommended that the thesis be defended. The Candidate answered all questions raised by the opponents, and the opponents were satisfied with the answers. In the general discussion, doc. Rádl asked whether the principle of phage therapy is applicable to the potential treatment of tuberculosis.

Prof. Zimčik asked about the specific role of the 2-substituent on the phenyl ring of the discussed compounds – whether it affected the binding by its bulkiness per se or rather distorted the conformation of the molecule. He also asked whether the CDI-mediated coupling produced the theoretically possible self-polymerization side products. Prof. Musílek asked for details about how the selectivity towards (myco)bacterial vs human ProRS can possibly be achieved and further suggested the introduction of polar substituents on the phenyl ring to enhance the H-bonding of the ligands. The Candidate's concise and logical responses demonstrated his adequate knowledge of the subject. As a result, the Committee concluded by voting that the thesis was successfully defended.

<b>Result of defence:</b>	pass (P)	
<b>Chair of the committee:</b>	Doležal Martin, prof. PharmDr., Ph.D.	.....
<b>Committee members:</b>	Kučera Radim, doc. PharmDr., Ph.D.	.....
	Malík Ivan, doc. PharmDr., Ph.D.	.....
	Miletín Miroslav, doc. PharmDr., Ph.D.	.....
	Musílek Kamil, prof. PharmDr., Ph.D.	.....
	Nováková Veronika, doc. PharmDr., Ph.D.	.....
	Rádl Stanislav, doc. Ing., CSc.	.....
	Vinšová Jarmila, prof. RNDr., CSc.	.....
	Zimčik Petr, prof. PharmDr., Ph.D.	.....
	Zitko Jan, doc. PharmDr., Ph.D.	.....