MUNI

Habilitation Board Decision on the Nomination for Appointment to Associate Professor

Masaryk University	
Faculty	Faculty of Medicine
Procedure field	Medical Chemistry and Biochemistry
Applicant	PharmDr. Jiří Kos, Ph.D.
Applicant's home unit, institution	Faculty of Medicine, Masaryk University
Habilitation thesis	Study of biologically active amides as potential drugs
Board members	
Chair	prof. RNDr. Eva Táborská, CSc. *Faculty of Medicine, Masaryk University*
Members	prof. PharmDr. Petr Babula, Ph.D. *Faculty of Medicine, Masaryk University* prof. MUDr. Martina Řezáčová, Ph.D. *Ústav lékařské biochemie, LF UK, Hradec Králové* prof. Jerzy Silberring, Ph.D. *Department of Analytical Chemistry and Biochemistry, AGH University of Science and Technology, Krakow, Poland* prof. MUDr. Martin Péč, PhD. *Ústav lekárskej biológie, Jesseniova lekárska fakulta v Martine, Univerzita Komenského v Bratislave, Slovensko*

Evaluation of the applicant's scholarly/artistic qualifications

PharmDr. Jiří Kos, Ph.D., is a graduate of the Master's studies at the Faculty of Pharmacy (FaF) of the Veterinary and Pharmaceutical University (VFU) Brno. He completed his studies there in 2010. Subsequently, he started his PhD studies at the FaF VFU in the field of Pharmaceutical Chemistry. In 2013, he received a PharmDr. degree in Pharmaceutical Chemistry and in 2015 he defended his doctoral thesis and obtained a Ph.D. degree. In the years 2013-2015, he was employed as an assistant and from 2014 to 2019 as an assistant professor at the Department of Chemical Medicines FaF VFU. In the years 2019-2021, he worked as a researcher at the Regional Center for Advanced Technologies and Materials at the Faculty of Science, UP. From 2021, he has worked as an assistant professor at the Institute of Biochemistry of the Faculty of Medicine of the MU.

In his scientific research, which Dr. Kos started during his PhD studies, he systematically deals with the synthesis of new bioactive organic compounds, evaluation of their physico-chemical properties and biological effects. To develop new substances, he uses modern fast microwave synthesis procedures and so-called click-chemistry. Newly prepared substances are tested for a number of biological effects, especially antimicrobial, antiviral, antitumor, antitrypanosomal and anti-inflammatory activity. Another studied model is electron transport during photosynthesis and its inhibition.

The methods of synthesis used in the experiments enable systematic derivatization of the prepared compounds, their very complex testing and targeted monitoring of the relationship between structure and biological activity. From a large series of derivatives that Dr. Kos gradually prepared and tested, several series of analogs were obtained that showed very high antibacterial activity. Research in this area is very relevant in connection to the increase in bacterial drug resistance and the search for new antibiotics in recent years.

Dr. Kos is the author or co-author of 36 peer-reviewed papers listed in the Web of Science; all these works were published in journals with an impact factor. Most of the papers are published in Q2 journals (n=25), then in Q3 (n=5), Q1 (n=4) and Q4 (n=2). The number of papers in journals with an impact factor in which Dr. Kos is the first or corresponding author is 12. The number of citations according to WOS is 359, the value of the Hirsch index is equal to 14. He also presented his contributions at multiple foreign conferences. The parameters of his scientific publication activity, thus, significantly exceed all the criteria required from applicants for the title of associate professor at the Faculty of Arts of the MU.

Dr. Jiří Kos was involved in the successful solution of the research grant project APVV17-0373, which was awarded by the "Agency for the Support of Research and Development" of the Ministry of Education, Science, Research and Sport of the Slovak Republic.

Conclusion: The applicant's scholarly/artistic capabilities **meet** the requirements expected of applicants participating in a habilitation appointment procedure in the field of Medical Chemistry and Biochemistry.

Evaluation of the applicant's pedagogical experience

Dr. Kos has been working as a teacher since 2013. At FaF, he taught lectures, laboratory exercises and seminars in Pharmaceutical Chemistry, General and Inorganic Chemistry, and laboratory exercises in Drug Analysis and Analytical Chemistry. His work as a supervisor of diploma and rigorous theses is significant. There are a total of 27 successfully defended diploma theses and 7 rigorous theses.

At the Institute of Biochemistry of the Faculty of Medicine Masaryk University, where he has been working since 2021, he has been teaching seminars and practical exercises in Medical Chemistry and Biochemistry.

He is one of the two authors of the Laboratory Practices from Pharmaceutical Chemistry script.

Conclusion: The applicant's pedagogical capabilities **meet** the requirements expected of applicants participating in a habilitation appointment procedure in the field of Medical Chemistry and Biochemistry.

Habilitation thesis evaluation

Dr. Jiří Kos submitted a habilitation thesis entitled Study of Biologically Active Amides as Potential Drugs. The work is conceived as a set of eighteen original articles published in high-impact journals and supported by a commentary. These selected works were published during the last nine years, and in eight of them, Dr. Kos is the first author. The content of the habilitation work corresponds to the current focus of the habilitation candidate on the synthesis of new biologically active molecules using highly modern methodological procedures and the study of their antimicrobial, antiviral, antitumor, antitrypanosomal and anti-inflammatory effects. He synthetically focuses mainly on substances from the group of anilides and cinnamic acid. In the commentary of the habilitation thesis, Dr. Kos refers to the results of the publications, summarizes them and focuses on emphasizing the relationships between the modification of the chemical structure and biological effects.

With his results presented in his habilitation thesis, Dr. Kos significantly contributes to expanding the state of knowledge, especially in the field of antimicrobial therapy, when the increase in the number of human pathogenic bacteria that are resistant to one or more antibiotics potentiates the need to develop new antimicrobial compounds.

Dr. Kos' habilitation thesis was assessed by three respected experts in the field of pharmaceutical chemistry and drug research. The mentioned experts evaluate the issue summarized in the habilitation thesis as highly actual, they positively assess the professional quality of the included publications, the formal and linguistic level of the work as well as its compact character. Based on all the three reviews, the presented habilitation thesis meets the standard requirements for habilitation theses in the field of Chemistry and Biochemistry at the Faculty of Medicine, Masaryk University.

Conclusion: The applicant's habilitation thesis **meet** the requirements expected of habilitation theses in the field of Medical Chemistry and Biochemistry.

Habilitation Board Decision on the Nomination for Appointment to Associate Professor

Secret vote results

Voting took place: electronically

Number of board members		5
Number of votes cast		5
of which	in favour	5
	against	0

Board decision

Based on the outcome of the secret vote and following an evaluation of the applicant's scholarly or artistic qualifications, pedagogical experience and habilitation thesis, the board hereby submits a proposal to the Scientific Board of the Faculty of Medicine of Masaryk University to **appoint the applicant associate professor** of Medical Chemistry and Biochemistry.

In Brno on 02.11.2022

prof. RNDr. Eva Táborská, CSc. .....