Evaluation Board Decision on the Nomination for Appointment to Professor

Masaryk University	
Faculty	Faculty of Medicine
Procedure field	Anatomy, Histology and Embryology
Applicant	doc. RNDr. Petr Vaňhara, Ph.D.
Applicant's home unit, institution	Faculty of Medicine, Masaryk University
Board members	
Chair	prof. MUDr. Mgr. Zbyněk Tonar, Ph.D. *Faculty of Medicine in Pilsen, Charles University*
Members	prof. RNDr. Petr Dubový, CSc. *Faculty of Medicine, Masaryk University* prof. MUDr. Jaroslav Mokrý, Ph.D. *Department of Histology and Embryology, Faculty of Medicine in Hradec Králové, Charles University* prof. MUDr. Ondřej Naňka, Ph.D. *Anatomický ústav 1. LF UK Praha* Univ.-Prof. Dr. med. Niels Hammer *The Division of Macroscopic and Clinical Anatomy, Gottfried Schatz Research Center, Medical University of Graz, Austria*

Evaluation of the applicant's scholarly/artistic qualifications

The applicant's academic development shows a consistent trajectory from molecular and cell biology towards modern morphology, tissue modelling and translational biomedical research. Petr Vaňhara received his MSc. degree in Molecular Biology and Genetics from the Faculty of Science, Masaryk University, in 2004, the RNDr. degree in 2006, and the Ph.D. degree in Molecular and Cell Biology in 2009. His doctoral thesis focused on the regulation of differentiation and programmed cell death of blood cells and was awarded the Prize of the Dean of the Faculty of Science, Masaryk University. In 2020, he habilitated in Anatomy, Histology and Embryology at the Faculty of Medicine, Masaryk University, with the thesis Tissue plasticity in cancer, stress, and aging. He also completed postdoctoral training at the Medical University of Vienna, Comprehensive Cancer Center.

P. Vaňhara has built his academic career primarily at the Faculty of Medicine, Masaryk University, but has also has experience from working abroad. Since 2011, he has worked at the Department of Histology and Embryology, Faculty of Medicine, Masaryk University, where he currently serves as Associate Professor, Vice-Head of the Department and head of the Tissue Plasticity and Regeneration research group. Since 2016, he has also been affiliated with the International Clinical Research Center of St. Anne's University Hospital in Brno. His previous experience includes work at the Faculty of Science, Masaryk University, University Hospital Brno, the Centre for Analysis and Modelling of Tissues and Organs, and the Medical University of Vienna.

His research focuses on tissue plasticity, cellular stress responses, regeneration, ageing and cancer. He has contributed to the study of endoplasmic reticulum stress response and its role in tissue ageing, regeneration and malignant transformation. He contributed to the description of the TUSC3 gene as a regulator of endoplasmic reticulum homeostasis and to the understanding of its functions in epithelial tissues and cancers. Another important research direction concerns pluripotent stem cells, progenitor cells and their differentiation into functional cell types.

A distinctive methodological contribution of the applicant is the use of bioanalytical and computational approaches for sensitive cellular phenotyping. He has developed and applied mass spectrometry-based approaches combined with advanced biostatistics and machine learning for detecting subtle phenotypic changes in stem and progenitor cells. These methods are relevant for quality control of clinical-grade pluripotent stem cells and their derivatives and represent an original link between cell biology, analytical chemistry and computational evaluation.

The applicant's recent research includes clinically relevant near-to-native tissue models. In lung research, he has contributed to the development and use of expandable lung-like epithelial cells derived from pluripotent stem cells to study pulmonary epithelial differentiation, injury, regeneration and endoplasmic reticulum-linked stress responses. In pancreatic ductal adenocarcinoma, he has focused on ex vivo patient-derived models, including three-dimensional spheroids and organoids, with the aim of modelling tumour growth, chemoresistance and clinically relevant biological features. This work also includes the development of a standardized pancreatic ductal adenocarcinoma biobank and the integration of molecular, mass spectrometric and clinical data for precision medicine.

The publication record and project activity of P. Vaňhara are more than convincing. According to the submitted documentation, he is the author or co-author of 52 original research articles in journals indexed in WoS and 4 original research articles in journals indexed in Scopus, together with 2 chapters in scholarly book publications. His works have received 1,045 citations in WoS, with a h-index of 16. His selected important publications include work on TUSC3 in ovarian cancer, artificial neural networks in medical diagnosis, TUSC3 loss and prostate cancer growth, metabolic changes in multiple myeloma, and intact-cell mass spectrometry as a quality control tool for cultured human embryonic stem cells. He has served as principal investigator in projects focused on quality control of clinical-grade pluripotent stem cells, pulmonary stress and regeneration, and ex vivo cellular models for pancreatic adenocarcinoma.

The applicant's achievements include the MUNI Scientist Award for outstanding research achievements, the Award of the Czech Society for Analytical Cytometry for the best publication in basic research, and the Prize of the Dean of the Faculty of Science, Masaryk University, for outstanding Ph.D. research achievements.

Conclusion: The applicant's scholarly/artistic capabilities **meet** the requirements expected of applicants participating in a professor appointment procedure in the field of Anatomy, Histology and Embryology.

Evaluation of the applicant's pedagogical experience

P. Vaňhara has long-term and continuous pedagogical experience at the Faculty of Medicine, Masaryk University. It covers both general medical education and specialized biomedical training. Since 2011, he has participated in the teaching of Histology and Embryology and selected topics in Embryology and Teratology. His teaching includes lectures and practical classes in several degree programmes, particularly General Medicine in Czech and English, Dentistry in English, and the specialist programme in Clinical Embryology and Assisted Reproduction Technology. This teaching experience links classical morphology with developmental biology, reproductive biology and clinical laboratory practice.

P. Vaňhara has contributed to the modernization of teaching materials and student training. He has prepared or co-prepared educational atlases and teaching tools covering general histology, microscopic anatomy, electron microscopic cytology and embryology. His pedagogical activity also includes supervision and mentoring of doctoral, undergraduate and master's students, including successfully defended Ph.D. theses. He has also been involved in the co-supervision of students from the Biotechnology programme at the University of Girona, Spain.

The applicant has taken responsibilities in doctoral education. He is a member of the doctoral committee in Biomedical Sciences – Morphology, and his research group provides training in cell biology, tissue engineering, stem cell biology, three-dimensional tissue models, microscopy, molecular analysis and mass spectrometry-based methods. This connection between active research and teaching is valuable.

Conclusion: The applicant's pedagogical capabilities **meet** the requirements expected of applicants participating in a professor appointment procedure in the field of Anatomy, Histology and Embryology.

Evaluation of the applicant as a respected and recognized scholarly or artistic figure in a given field

P. Vaňhara is a respected researcher in tissue plasticity, tissue regeneration, cellular stress response and advanced tissue models. His profile combines histology and embryology with molecular and cell biology, cancer biology, stem cell research, mass spectrometry, imaging, computational methods and translational biomedical research.

His recognition is supported by publication activity, invited lectures, expert service and collaborations. He has given guest lectures at academic and research institutions including the University of La Laguna, Charles University, BIOCEV and CEITEC. He is a member of professional societies including the International Society for Stem Cell Research, the Czechoslovak Society for Biology and the Czech Society for Analytical Cytometry. Since 2021, he has served as a member of the Biotechnology panel of the Czech Health Research Council and as a member of the Publishing Board of the Faculty of Medicine, Masaryk University. He also serves as a reviewer for journals in cancer biology, cell transplantation, inorganic biochemistry, and cellular and molecular biology.

The applicant's international standing is demonstrated by sustained cooperation with foreign institutions. The submitted documentation lists long-term collaboration with the University of Cagliari in Italy in the development of compounds affecting cell stress and in chemometric analyses, with the Translational Medical Oncology group at the German Cancer Research Center in Heidelberg in precision medicine and cell and tissue models, and with the University of Girona in Spain in cell and tissue stress and advanced computational approaches. External support letters from Newcastle University and the Medical University of Graz confirm his international activity in tissue engineering, tissue modelling, regenerative medicine, stem cell biology and cellular stress responses.

An important aspect of the applicant's profile is his ability to build and lead an interdisciplinary research group. His Tissue Plasticity and Regeneration group brings together molecular and cell biology, histology, embryology, stem cell culture, three-dimensional tissue models, cancer biology, lung models, microscopy, mass spectrometry and computational analysis. The group also collaborates with clinical partners, especially in pancreatic cancer and pulmonary disease research.

Conclusion: The applicant **is** a respected and recognized scholarly figure in his/her field. The applicant **has** made a significant contribution to the development of his/her field. The applicant **constitutes** a leading figure in his/her field of scholarship or research.

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Evaluation Board Decision on the Nomination for Appointment to 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 role as a respected and recognized scholarly or artistic figure, the board hereby submits a proposal to the Scientific Board of the Faculty of Medicine of Masaryk University to **appoint the applicant professor** of Anatomy, Histology and Embryology.

In Brno on 17.07.2026

prof. MUDr. Mgr. Zbyněk Tonar, Ph.D. .....