

COMMENTARY TO HABILITATION THESIS¹

The submitted habilitation thesis is presented as a commented collection of publications focused on prognostic and predictive biomarkers in gynecological malignancies. The included studies were conducted over the past decade and document the gradual evolution of the author's scientific and professional interests in gynecological oncology. A common theme across the publications is the effort to deepen understanding of the biological basis of gynecological cancers and to translate newly acquired knowledge into individualized diagnostic and therapeutic approaches.

Over the past two decades, oncology has undergone a profound transformation, shifting from the traditional assessment of clinicopathological tumor characteristics toward the integration of molecular and genetic information, which increasingly influences both diagnostic and therapeutic decision-making. This development forms the conceptual framework of the present habilitation thesis.

A substantial portion of the research presented was conducted within the Multidisciplinary Gynecologic Oncology Working Group at University Hospital Brno. The group was established to link clinical care with research and to create a collaborative platform for clinical oncologists, gynecologic oncologists, pathologists, molecular biologists, radiologists, radiation oncologists, and other specialists. Interdisciplinary collaboration represents an essential prerequisite for modern clinical research and enables the effective translation of scientific discoveries from the laboratory into clinical practice. The establishment of this platform significantly contributed to the development of multiple research projects focused on the biological characteristics of gynecological cancers and their clinical implications.

The first thematic section of the thesis is devoted to endometrial cancer. As the most common gynecological malignancy in developed countries, endometrial cancer has undergone substantial changes in recent years, particularly with the introduction of molecular classification. This approach has significantly complemented traditional clinicopathological risk stratification at the time of diagnosis and has enabled more accurate prognostic assessment, greater individualization of treatment strategies, and, in selected situations, prediction of treatment response. The publications in this section focus on the clinical significance of molecular classification, its implementation in routine clinical practice, and the use of molecular markers in treatment decision-making. An important component of these activities was international collaboration within the European Network of Individualized Treatment in Endometrial Cancer (ENITEC), which provided opportunities to participate in projects focused on validating molecularly based prognostic models and applying them in everyday clinical practice.

The second thematic section addresses ovarian cancer. Despite advances in surgical and systemic treatment, ovarian cancer remains one of the most serious gynecological malignancies, and both primary and acquired resistance to systemic therapy pose a major clinical challenge. The publications in this part of the thesis focus on novel prognostic and predictive biomarkers, particularly Schlafen 11 (SLFN11), PD-L1 expression, and SMARCA4 alterations. These studies have advanced understanding of tumor heterogeneity, mechanisms

¹ The commentary must correspond to standard expectations in the field and must include a brief characteristic of the investigated matter, objectives of the work, employed methodologies, obtained results and, in case of co-authored works, a passage characterising the applicant's contribution in terms of both quality and content.

of treatment response, and the development of therapeutic resistance. They also underscore the growing importance of the tumor microenvironment and interactions between tumor and immune cells, which are key areas of oncological research.

Over time, the author's research expanded to include comprehensive genomic profiling and precision oncology. The implementation of next-generation sequencing technologies enabled the identification of molecular alterations with potential therapeutic relevance and opened new opportunities for targeted treatment in patients with gynecological malignancies. These activities also included evaluating genomic profiling in routine clinical practice and assessing the clinical utility and therapeutic actionability of identified molecular alterations. Collectively, these studies document a gradual transition from investigating individual biomarkers to a comprehensive molecular view of cancer.

In parallel with biomarker research, considerable attention was devoted to translating new scientific findings into clinical care. In addition to conducting research projects, the author helped introduce novel therapeutic approaches into routine practice, developed clinical recommendations, and conducted clinical trials. Particular emphasis was placed on evaluating new systemic treatment options for gynecological malignancies and their application in everyday clinical practice. These activities represent a natural integration of scientific research with patient care and reflect the conviction that the primary goal of clinical research is not only the generation of new knowledge but also its translation into meaningful patient benefits.

The collection of publications documents the gradual evolution of the author's research activities, from the study of individual prognostic and predictive biomarkers to the integration of molecular information into the diagnosis and treatment of gynecological malignancies. At the same time, it reflects a long-term effort to bridge clinical and research activities and to facilitate the implementation of novel scientific findings into the everyday care of patients with gynecological cancers. The studies included in the present habilitation thesis do not represent the complete publication record but rather a selection chosen for their relevance to the topic and their ability to reflect the author's scientific development. The included studies are those in which the author made a substantial contribution to study design, data acquisition and analysis, interpretation of results, manuscript preparation, and/or overall research direction. Together, these publications constitute the principal scientific outputs that form the basis of the present habilitation thesis.

Bibliographic records for the selected publications, along with the author's contribution to each study, are provided below.

[1]² WEINBERGER, Vit, **Marketa BEDNARIKOVA**, Jitka HAUSNEROVA, Petra OVESNA, Petra VINKLEROVA, Lubos MINAR, Michal FELSINGER, Eva JANDAKOVA, Marta CIHALOVA and Michal ZIKAN. A Novel Approach to Preoperative Risk Stratification in Endometrial Cancer: The Added Value of Immunohistochemical Markers. *Frontiers In Oncology* [online]. 2019, **9**(265, Article 265). ISSN 2234-943X. Available at: doi:10.3389/fonc.2019.00265

Document Type: Article; IF = 4,848; median IF ONCOLOGY – 3,297; according to IF ONCOLOGY Q2

² Bibliographic record of a published scientific result, which is part of the habilitation thesis.

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
40	20	40	40

[2] BEDNARIKOVA, Marketa, Petra VINKLEROVA, Jana GOTTWALDOVA, Petra OVESNA, Jitka HAUSNEROVA, Lubos MINAR, Michal FELSINGER, Dalibor VALIK, Zdenka CERMAKOVA and Vit WEINBERGER. The Clinical Significance of DJ1 and L1CAM Serum Level Monitoring in Patients with Endometrial Cancer. Journal Of Clinical Medicine [online]. 2021, 10(12, Article 2640). ISSN 2077-0383. Available at: doi:10.3390/jcm10122640
Document Type: Article; IF = 4,964; median IF MEDICINE, GENERAL & INTERNAL – 2,982; according to IF MEDICINE, GENERAL & INTERNAL Q2; according to AIS MEDICINE, GENERAL & INTERNAL Q2

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
70	90	90	90

[3] BEDNAŘÍKOVÁ, Markéta *(corresponding author)*, J. HAUSNEROVÁ, L. MINÁŘ, R. TASLEROVÁ, P. VINKLEROVÁ, L. EHRlichOVÁ, J. TRIZULJAK, I. BLAHÁKOVÁ, D. PRINC, K. MATULOVÁ, P. OVESNÁ, O. SLABÝ and V. WEINBERGER. Molecular testing of endometrial carcinoma in real-world clinical practice; [Molekulární testování karcinomu endometria – analýza prvních zkušeností z klinické praxe]. Klinická Onkologie [online]. 2023, 36(3), 215–223. ISSN 0862-495X. Available at: doi:10.48095/ccko2023215
Document Type: Article; Category: Oncology – SJR Q4

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
60	90	90	70

[4] BEDNAŘÍKOVÁ, M. *(corresponding author)*, M. KOBLÍŽKOVÁ, P. OVESNÁ, J. HAUSNEROVÁ, L. EHRlichOVÁ, M. FELSINGER, M. TOMKOVÁ, L. MINÁŘ a V. WEINBERGER. Druhá a vyšší linie systémové léčby karcinomu endometria – zkušenosti z reálné klinické praxe. Klinická Onkologie [online]. 2026, 39 (3), 1-12. ISSN 0862-495X. Available at doi: 10.48095/ccko2026184
Document Type: The article was published in *Klinická onkologie* on June 15, 2026; however, as of the application date to initiate the habilitation procedure, it had not yet been indexed in the Scopus database.

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
90	100	90	100

[5] BEDNAŘÍKOVÁ, Markéta; Vít WEINBERGER; Petra BRETOVÁ a Lucie EHRlichOVÁ. Endometrial cancer; [Karcinom endometria]. In ZIKÁN, Michal. *Onkogynéologie*. 1. vyd. Praha: Maxdorf, 2024, s. 159-176. Jessenius. ISBN 978-80-7345-786-0.
Document Type: Chapter in textbook

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
-	90	80	90

[6] BEDNARIKOVA, Marketa, Jitka HAUSNEROVA, Lucie EHRLICHOVA, Kvetoslava MATULOVA, Eliska GAZARKOVA, Lubos MINAR and Vit WEINBERGER. Can Schlafen 11 Help to Stratify Ovarian Cancer Patients Treated with DNA-Damaging Agents?. Cancers [online]. 2022, 14(10, Article 2353). ISSN 2072-6694. Available at: doi:10.3390/cancers14102353

Document Type: Review; IF = 5,200; median IF ONCOLOGY – 3,600; according to IF ONCOLOGY Q2; according to AIS ONCOLOGY Q2

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
-	80	90	90

[7] HAUSNEROVÁ, J., L. EHRLICHOVÁ, P. OVESNÁ, K. MATULOVÁ, J. CHLUBNOVÁ, V. WEINBERGER and Markéta BEDNAŘÍKOVÁ *(corresponding author)*. The role of Schlafen 11 as a predictive biomarker in ovarian cancer patients treated with platinum-based chemotherapy – results of the pilot analysis; [Význam nového prediktivního markeru Schlafen 11 u pacientek s karcinomem ovaria léčených chemoterapií založené na platinovém derivátu – výsledky pilotní analýzy]. Klinická Onkologie [online]. 2023, 36, S127 - S130. ISSN 0862-495X. Available at: doi:10.48095/ccko2023S127

Document Type: Article; Category: Oncology – SJR Q4

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
50	70	80	70

[8] HAUSNEROVÁ, J., L. EHRLICHOVÁ, P. OVESNÁ, E. GAZÁRKOVÁ, J. CHLUBNOVÁ, K. MATULOVÁ, L. MINÁŘ, V. WEINBERGER and M. BEDNAŘÍKOVÁ *(corresponding author)*. Pilot analysis of the PD-L1 expression in ovarian cancer patients treated with platinum-based chemotherapy; [Pilotní analýza exprese PD-L1 u pacientek s ovariálním karcinomem léčených chemoterapií na bázi platiny]. Klinická Onkologie. 2022, 35, S135 - S137. ISSN 0862-495X.

Document Type: Article; Category: Oncology – SJR Q4

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
50	70	80	70

[9] BEDNARIKOVA, Marketa, Jitka HAUSNEROVA, Petra POKORNA, Michal FELSINGER, Svatopluk RICHTER, Lucie EHRLICHOVA, Jana ORLICKOVA, Lubos MINAR, Ondrej SLABY and Vit WEINBERGER. SMARCA4-deficient dedifferentiated ovarian carcinoma with rapid progression during adjuvant platinum-based chemotherapy: a case report and implications for molecular-driven treatment strategies. Therapeutic Advances In Medical Oncology [online]. 2025, 17(17588359251376858, Article 17588359251376858). ISSN 1758-8359. Available at: doi:10.1177/17588359251376858

Document Type: Article; in 2024 IF = 4,200; median IF ONCOLOGY – 2,800; according to IF ONCOLOGY Q2; according to AIS ONCOLOGY Q2

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
70	90	80	90

[101] POKORNA, Petra, Jana ORLICKOVA, Tana MACHACKOVA, Jitka HAUSNEROVA, Lucie EHRLICHOVA, Robin JUGAS, Eliska HLOUSKOVA, Alena HOMOLOVA, Sara VILMANOVA, Julia BOHOSOVA, Kamila SOUCKOVA, Marek SVOBODA, Vit WEINBERGER, Ondrej SLABY and **Marketa BEDNARIKOVA** ***(corresponding author)***. Genomic complexity and evolution of high-grade serous ovarian cancer treated with platinum-based chemotherapy: advancing precision oncology beyond BRCA1/BRCA2. Journal Of Ovarian Research [online]. 2025, 19(1, Article 3). ISSN 1757-2215. Available at: doi:10.1186/s13048-025-01911-z

Document Type: Article; in 2024 IF = 4,200; median IF REPRODUCTIVE BIOLOGY – 2,400; according to IF REPRODUCTIVE BIOLOGY Q1; according to AIS REPRODUCTIVE BIOLOGY Q2

Experimental work (%)	Supervision (%)	Manuscript (%)	Research direction (%)
30	80	30	70