

## Evaluation of the Ph.D. thesis

**Author:** MD. Liubov Kastnerová

**Title:** Clinicopathological and molecular biologic characteristics of selected cutaneous epithelial and nonepithelial tumors

**Supervisor:** Prof. MD. Dmitry Kazakov, Ph.D.

**Reviewed by:** Radek Šíma, Ph.D., Institute of Parasitology, BC ASCR

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This thesis represents a substantial body of work on histomorphological and molecular genetic characterization of selected cutaneous epithelial and non-epithelial tumors. The Ph.D. thesis is written in English and comprises 166 printed pages in total, with a general introduction followed by chapters composed almost entirely of published papers. The thesis is composed in a logical manner and subdivided into sensible sections. As non-specialist in the field, I appreciated the overall clarity of the text. The methodologies employed range over a large subject area and indicate that the group she works in is truly multi-disciplinary. Techniques range over the conventional histological and immunohistochemical methods, differential expression analysis using real-time PCR, fluorescence in-situ hybridization, and advanced methods of next-generation sequencing.

The thesis is structured as a commentary to the 20 articles. In 8 papers, Liubov is the first author and a co-author on the remaining 12 papers. Primary references that do not include those in published papers count up to 64 and include relevant and up to date literature. Formally, the work follows the common structure required by the Faculty of Medicine.

The main section of the thesis is focused on cutaneous epithelial tumors. This section is subdivided into two parts. Nine papers are dedicated to adnexal tumors; another five papers deal with lesions of anogenital mammary-like glands. All 14 papers were published in highly reputable journals with impact factor, and they represent a core of the thesis. The author brings several novel findings of general interest, e.g., identification of yet unreported alterations of the *MYBL1* gene in adenoid cystic carcinoma of the skin and lack of deletion of the 1p36 locus in this neoplasm.

The second part of the thesis is focused on non-epithelial tumors of the skin and includes five scientific papers dealing with lymphoproliferative disorders, mesenchymal tumors, and melanocytic tumors. As in the previous section, all papers meet high scientific standards and bring original and interesting findings.

### Final evaluation

Liubov Kastnerová prepared an excellent Ph.D. thesis. She proved her talent for scientific work and ability to collaborate and contribute to the work of others, both in an intellectual and experimental capacity. I overall enjoyed the reading of the thesis very much and concluded that this was a very professional and substantial body of work. The scientific arguments are strong, and current work is integrated well with previous literature.

**I strongly recommend this thesis as a high-quality basis for awarding the Ph.D. degree to Liubov Kastnerová.**

## Question

1. Detection of a novel translocation leading to *NFIX-PKN1* gene fusion in the secretory carcinoma of the skin is one of the remarkable findings. According to the authors of the study, this translocation has not been found in any other tumor. Please could describe a possible role of both fusion partners in healthy cell and suggest biological basis of aberrant effect of the translocation?

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Radek Šíma