



Confidential

Supervisor's Review of USB RIFCH PhD Thesis

Surname of the PhD student: Šálková	Name of supervisor: Prof. Dipl.-Ing. Martin Flajšhans, Dr.rer.agr.
Title of PhD thesis: Methodical approaches to examination of lymphoid tissues in sturgeons	

OVERALL COMMENTARY ON THE PhD THESIS

Eva Šálková entered my lab as M.D. licensed in surgical pathology in autumn 2012 with her intention to study Ph.D. curricula as an external student. Her original task was to study comparative haematology of sturgeons but with the ongoing research studies, the task was modified more towards the examination of sturgeon haematopoietic and lymphoid tissues using histological and immunohistochemical methods and examination of sturgeon leukocyte indices. Being already professionally educated in histology, immunohistochemistry and haematology, Eva Šálková became familiar with the system of sturgeon breeding, techniques of artificial reproduction, with design, management and operating the growth tests from which she took her model fish, and namely with particularities of fish haematology. She extended her initiative to learn more on fish histopathology in two courses at FFPW in 2015 and 2018.

Her PhD thesis is conducted as a compilation of two papers published in peer-reviewed IF – journals (Chapters 2 and 3), with the introductory review how polyploidy in fish impacts their physiology, namely haematology and haematopoiesis in sturgeons, and lower vertebrates in general (Chapter 1), further accompanied with manuscript-under-revision on yearly dynamics of leukocyte indices of sturgeons of three ploidy levels (Chapter 4). The last Chapter 5 deals with general discussion which attempts to summarize the present perspectives of sturgeon haematology, haematopoiesis and lymphopoiesis. Pictorial illustration of the text with author's histological microphotographs is worthily acknowledged and these images surely deserve publishing in some future histological atlas of fish.

I can see the most important milestones of progress achieved in work and thesis of Eva Šálková as follows: She firstly described the occurrence of Hassall's corpuscles in the thymus of sturgeons and contributed to the complete histological description of their thymus. Secondly, she confirmed the



possibility to apply several commercially available human antibodies on fish tissue, while negative- or cross-reaction of some others supported the importance to develop fish specific antibodies. Last but not least, her data on leukocyte indices of three polyploid sturgeons (functional diploid, -tetraploid and -hexaploid) suggest a significant effect of ploidy level on total number of leukocytes and morphological nuclear changes in granulocytes and lymphocytes while seasonal variations were rather found depending on environmental conditions. It can be concluded that the examination of leukocyte indices, as well as histological and immunohistochemical examinations are the main methodical approaches to assess lymphoid organs and immune system in sturgeons, and these methods should be applied and made available in ichthyological practise.

As a supervisor of MUDr. Eva Šálková, I can state that the aims of this PhD thesis were fulfilled and that the author came out with few novel findings which enriched the yet fragmented knowledge on sturgeon haematopoiesis and lymphopoiesis.

Finally, I recommend her PhD thesis for defense.

FINAL RECOMMENDATION

- can be recommended for defence of PhD Thesis
 can be recommended with reservations for defence of PhD Thesis
 can not be recommended for defence of PhD Thesis

Vodňany, April 21, 2021
Date and place

prof. Flajšhans.....
surname and signature