



Fakulta rybnářství
a ochrany vod
Faculty of Fisheries
and Protection
of Waters

Jihočeská univerzita
v Českých Budějovicích
University of South Bohemia
in České Budějovice
Czech Republic

Review of USB FFPW PhD thesis

First name(s), surname, titles of the PhD student: Eva Šálková, MUDr.	First name(s), surname, titles of supervisor: Prof. Dipl.-Ing. Martin Flajšhans, Dr. rer. Agr.
Title of PhD thesis: Methodical approaches to examination of lymphoid tissues in sturgeons	

REVIEWER:

Surname: Palíková	Institution: Veterinary university Brno, Česká republika
Name: Miroslava	
Titles: doc., MVDr., Ph.D.	E-mail: PALIKOVAM@vfu.cz
Please describe your professional relationship to the PhD student: no	Please describe your field of expertise: fish diseases

QUESTIONNAIRE

Originality, scientific importance, perspectives and impacts of results presented in the PhD thesis for basic and/or applied research

Evaluate competitiveness of the PhD thesis in the international context and compare its level with the current state of the art in the field (**extent ¼ – ½ page**):

The dissertation thesis submitted by MUDr. Eva Šálková is focused on study methods and examination of haematopoietic and lymphoid tissues in sturgeons.

Histological and immunohistochemical examinations together with examination of white blood cell parameters represent the main methodical approaches to assess the immune system in general. The above mentioned methods have a wide range of uses, including the assessment of the health status of fish and the subsequent monitoring of various factors affecting the immune system of fish. Therefore, I consider the chosen theme very topical and the results obtained beneficial for practice.

The research presented in the thesis is of high quality. The studies are well designed and conducted and bring important new pieces of knowledge. The results are original and novel.



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Elaboration of the PhD thesis, objectives of the work and deliverables

Evaluate the overall level of elaboration of the PhD thesis (structuring of the main text, comprehensibility, logicity of the chapters and their ordering) and the originality of the selected approaches to solve the objectives; evaluate publications and whether the results described correspond to objectives of the PhD thesis (extent ¼ – ½ page):

The PhD thesis is based on two scientific articles already published and one manuscript currently under review in the journal "Veterinarni Medicina". It is clearly and logically structured into five main Chapters, contains Introduction, three chapters focused on individual studies, General discussion, Czech and English summary and further required information (list of publications, training and supervision plan during the study and *curriculum vitae*). The first Chapter contains the General introduction, Chapters 2, 3 and 4 present the research papers. The results described in these papers clearly correspond to objectives of the PhD thesis.

Overall, the thesis is standardly divided, with clearly specified and adapted objectives published in scientific journals.

OVERALL COMMENTARY ON THE PhD THESIS

Please write in the box specific comments concerning the PhD thesis in extent of 1-2 pages:

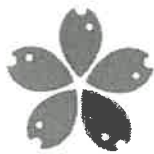
The Ph.D. thesis is well written and presents interesting and important topics. There is also a good quality of English with only a few errors. It is written on 80 pages and structured according to guidelines for writing the Ph.D. thesis at the Faculty of Fisheries and Protection of Waters. In General introduction the student clearly in a logical sequence of single chapters presents the current state of knowledge related to the issue using current literature. It includes 55 references and presents a nice review of literature. Introduction is written on 27 pages and includes student's own, very impressive photographic documentation.

Three following chapters contain student's own results presented in journals with IF (two of them accepted and the third under revision), namely in "Veterinarni Medicina" and the student is the first author of all of these manuscripts. Participation of the student on all manuscripts was 70%. In these papers, the study design, results and interpretation are well presented. They are summarized and put into context with the current state of knowledge in Chapter General discussion (4 pages), which includes 42 references.

Comments and discussion questions:

To what extent is the spleen involved in erythropoiesis in cartilaginous fish compared to the cranial kidney (see text on page 14)? Is there any difference from bony fish?

On page 11 you write that "only mature cells are involved, while blasts and vanishing cells are excluded". Why only mature cells are involved? In which cases are higher productions of



immature cells released into the peripheral blood and their higher amounts are typical for such reasons? In addition, their presence may affect other monitored parameters (e.g. lower ability to release oxygen radicals when monitoring phagocytic activity of peripheral leukocytes).

Therefore, did you observe any increase in developmentally younger forms of leukocytes (mainly in myelo/metamyelocytes) in repeated sampling (higher demands on hematopoiesis) in the study "Examination of white blood cell parameters for three different ploidy level sturgeon species reared in an indoor recirculation aquaculture system for one year"?

In the study "The first finding of Hassal's corpuscles in the thyme of cultured sturgeons" you found Hassal's corpuscles only in a small number of investigated fish (a total of three out of 16 investigated fish). What explanation do you have for the absence of these bodies in the rest of fish examined?

Differential counts of cartilaginous fish are closer to the differential counts of higher vertebrates than of skeletal fish. Do you have any explanation for this?

In conclusion, succeeded through this research work, I can unequivocally state that the submitted thesis meets the requirements for the dissertation, it is carefully and clearly arranged in terms of content and form, and therefore I recommend it for defence and after successful defence I recommend granting the Ph.D.

FINAL RECOMMENDATION

- PhD thesis can be recommended for defence
 PhD thesis can be recommended for defence with reservations
 PhD thesis cannot be recommended for defence

19.6.2021 Brno

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Date and place

MIROSLAVA PALÍKOVÁ

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Name and signature