



Habilitation Thesis Reviewer's Report

Masaryk University

Faculty

Procedure field

Applicant

**Applicant's home unit,
institution**

Habilitation thesis

Reviewer

**Reviewer's home unit,
institution**

Faculty of Pharmacy

Genomics and Proteomics

RNDr. Jan Hošek, Ph.D.

Department of Molecular Biology and Pharmaceutical
Biology

Regulation of the expression and activity of proteins
involved in the inflammatory response by natural
flavonoids

Univ.-Prof. Dr. Verena M. Dirsch

University of Vienna, Faculty of Life Sciences,
Department of Pharmacognosy

Dr. Hošek summarizes in his habilitation thesis 17 publications published between 2013-2018, of which five are review articles. The overall theme of these scientific contributions is the influence of natural products, specifically flavonoids, on inflammatory processes/signalling pathways. Here the applicant refers in the introductory overview mainly to redox regulation, modulation of pro-inflammatory enzymes (e.g. cyclooxygenases and lipoxygenases) and the NF- κ B and AP1 signalling pathway as mechanisms of action.

Of the 17 featured publications five are published in the *Journal of Natural Products*, which is clearly a Q1 journal with a current impact factor of 3.8. Jan Hošek signs these papers as first and corresponding author (2), shared first author (1), last and corresponding author (1), or second author (1), respectively.

Altogether scopus identifies for the applicant 55 published items with about 600 citations (h index 14). Together with the fact that Jan Hošek published already several papers as corresponding and/or last author this shows that he is a successful and independent researcher and scientist. Thus, there is no doubt that Jan Hošek fulfils the criteria for a successful habilitation.

The thesis itself, however, leaves some room for improvement: In the provided *List of Scholarly and Artistic Works* the applicant lists also review articles under *Original Research Articles*. The Thesis does not differentiate between original research articles, review articles and book chapter at all. It would have been also helpful to receive information regarding the contribution of the applicant at least to key publications, also to learn about his expertise for the envisaged field of habilitation. The introduction lacks in part scientific clarity and soundness by using terms like *natural medicine* (a term not defined in contrast e.g. to terms like *herbal medicinal products* or *natural products*), or by mentioning as a reason for a trend towards natural medicine, the "*low activity of synthetic substances*", which is quite a surprising statement.

The habilitation thesis is submitted in the field of "Genomics and Proteomics". Since I learned from this form that I have to judge (*Conclusion*) whether the submitted thesis fulfils the criteria for a specific field, and here obviously *Genomics/Proteomics*, I have to admit that I cannot do this. The thesis contains no information that refers to genomics/proteomics. The summary instead refers to typical areas of pharmacognosy/pharmaceutical biology, like anti- or pro-oxidant activity of flavonoids. The techniques used in the featured papers include classical cell and molecular biological techniques, such as qPCR, ELISA, flow cytometry, western blot analysis besides techniques for natural product isolation and identification. Only one featured paper (Hanáková, Hošek, Kutil *et al. J Nat Prod*, 2017) shows proteomic analysis.

Based on this data I cannot give a recommendation to accept this habilitation in the field of genomics/proteomics. The commission, however, knows the candidate well enough to decide on this issue.

Conclusion

The habilitation thesis entitled *Regulation of the expression and activity of proteins involved in the inflammatory response by natural flavanoids* by Jan Hošek *fulfils* the requirements expected of a habilitation thesis.

Based on the featured papers the field Pharmacognosy/Pharmaceutical Biology would be most appropriate from my point of view.

In Vienna on January 21, :

.....
signature