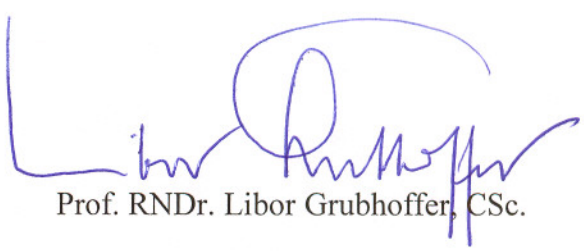
Supervisor´s statement to the bachelor thesis of Miss Adriana Walnerová

Miss **Adriana Walnerová** submitted her bachelor thesis entitled ´**Cloning of the gene coding for Outer surface protein C from the Lyme borreliosis spirochetes**´ to accomplish her cross-border bachelor studies of Biological Chemistry at Johannes Kepler University in Linz and the University of South Bohemia in České Budějovice. More than a year ago when our first students of the joint cross-border curriculum were supposed to choose a topic of their bachelor diploma project Adriana went straight for the Lyme borreliosis spirochetes as one choice of infectious biology in our laboratory. Outer surface lipoprotein C (OspC) as one of the crucial borrelia surface antigen, cloning of its gene in *E. coli* cells of the over-expression system to make recombinant protein rOspC was the main assignment of Adriana´s project. In our laboratory, we have considered the topic as one of high significance especially with regards to our currently running grant project focused on identification and isolation of the tick OspC receptor molecules.

Adriana started to work on the project with great enthusiasm, she had spent last summer in the laboratory working hard. Besides plenty time spent at the bench she had to collect a lot of new knowledge on the topic as well on theoretical background of the molecular biology and biochemistry techniques she decided to use. Although the OspC borrelia antigen has been prepared in several research laboratories so far, and even more rOspC is commercially available as a tool for LB laboratory diagnostics. Nevertheless, it is always very desirable to repeat already described procedures as well as look for new routes, and this is the case of Adriana´s contribution. To get a recombinant protein of the proper feature/behaviour is usually a big adventure, and it does not matter that somebody before you already did and succeeded. Adriana had to learnt/acquired a lot of knowledge as well as practical skills, just looking at the content of her thesis we can see that she managed following demanding techniques, methods and approaches: PCR; a few different electrophoretical techniques; preparing samples for DNA sequencing; transformation of expression cells; expression/over-expression of the protein; techniques of analytical and preparative biochemistry of proteins including immunobloting, and a piece of knowledge to work with monoclonal antibodies; affinity metal chromatography as well as to use of mass spectrometry in protein characterization. Using above mentioned currently topic methods and approaches Adriana was able to get nice/clear and convincing results, to evaluate and interpret them as well discussed them with respect to already published data. Adriana´s performance I have been following not only regarding results of her studies but also in the laboratory is just admirable, she has been hard working, and step by step strengthening and developing her great talent for scientific work in biochemistry/biological chemistry.

In conclusion, I would like to clearly support Miss Adriana Walnerová´s bachelor thesis for the defence.



On the hilltop of Kleť, June 12, 2010

Prof. RNDr. Libor Grubhoffer, CSc.