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Personal evaluation of Umesh Kumar Gautam by his supervisor

I personally know Umesh Gautam since August 2015, when he started to work in my laboratory. He comes from India, where he has obtained his Master of Science degree in the Department of Biochemistry on University of Hyderabad. Within the master study Umesh tested certain plants extract on rats, thus his experiences with insects were very limited. Nevertheless, in 2014 he came to Europe, and obtained one year stay within the International Training Course in the Institute of Genetics, Biological Research Centre, Szeged, Hungary in the Laboratory of Dr. Vilmos. Umesh was recommended into my laboratory as molecular biology specialist, but it turned out that he was rather biochemists or physiologists. His work in our lab was supported by my grants No. 14-07172S and 17-03253S provided by the Czech Science Foundation.

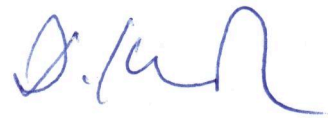
After several attempts to study signalling pathways of adipokinetic hormone we decided to focus the Umesh thesis on the effect of the entomopathogenic fungus *Isaria fumosorosea* on defence physiological and biochemical reactions in insect body and possible role of adipokinetic hormones in them.

During the PhD study Umesh managed basic and some special methods of insect biochemistry and physiology. They involved insect maintaining and dissection, work with entomopathogenic fungus, hormonal application, determination of enzyme activity, some PCR methods, measuring of hormonal and metabolite levels in insect body by spectrophotometric, chromatographic, immunological methods and incubation of insect organs under in vitro conditions. Umesh obtained valuable experiences with the entomopathogenic fungus from Dr. Bohatá from the Faculty of Agriculture here in České Budějovice; in my lab the experiences with this pathogen were minimal

His work on his topic resulted in 3 papers, and 2 of them - basic for his thesis - were done on the American cockroach, *Periplaneta americana* model. He proved that external application of adipokinetic hormone increased the efficacy of the used fungus in the cockroach, and some of his results suggested possible mode of the hormonal action. In the 3rd

paper, where we described defence reactions of vitellogenin against pathogens and their toxins, Umesh was responsible for the part dealing with the *Isaria* pathogen.

Umesh is of a complicated character, with a tendency to overestimate his abilities, including occasional ignoring of recommendations and advices, which was manifested within the practical work as well as within writing of the thesis. Especially from the beginning of his study Umesh underestimated his duties and then he got into (time) problems. Anyway, after all Umesh managed all pitfalls of the doctoral study and prepared thesis that met all the requirements stated in the Study rules of our University, so, I recommend the thesis for defence.



České Budějovice, 19th January, 2020

Dalibor Kodrık
Supervisor