

**FACULTY OF SCIENCE**  
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**Activation of insect anti-oxidative mechanisms by  
mammalian glucagon**

Rigorózní práce

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### **Annotation**

The present study considers functional homologies between two peptide hormones involved in metabolism: insect Adipokinetic hormones (AKH) and mammalian Glucagon. Using the firebug *Pyrrhocoris apterus* as a model insect, the possible effects of glucagon on mobilization of energy reserves and on elicitation of an antioxidant response to oxidative stress were analyzed. As a result, glucagon-immunoreactive material was detected for the first time in the firebug central nervous system and gut. Glucagon shows no involvement in mobilization of energy reserves or AKH. However, antioxidant activity is elicited after glucagon treatment, suggesting that the pathway involved is independent from that of AKH.

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### **Declaration**

I declare here that I worked out this thesis on my own only with the use of the cited literature and other cited sources.

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