

Trematode peptidases are important molecules responsible for biocatalysis in many basal biological processes and are crucial in host-parasite interactions. Therefore, these enzymes are intensively studied in order to characterize their biological functions and to use them as potential diagnostic or therapeutic targets. Lately, investigation of transcriptome and secretome revealed, that adult *Fascioloides magna* (giant liver fluke) expresses and secretes a variety of peptidases. Thus, this thesis focuses on three newly identified enzymes: cathepsin L (FmCL), cathepsin B (FmCB) and cathepsin D (FmCD). In other trematode species, these cathepsins are being linked mainly with the digestion of host blood. We applied quantitative PCR (qPCR) to investigate relative expression levels of the three enzymes among three developmental stages – egg, miracidium and adult. It was revealed that all cathepsins have the highest expression in adult flukes in comparison to eggs and miracidia. We also localized the place of transcription of FmCL, FmCB and FmCD in adult fluke using RNA *in situ* hybridization. All of the peptidases were detected in gastrodermis, and in addition, they were localized in the reproductive system. The latter surprising finding is suggesting that these enzymes might have multiple functions in adult *F. magna*, not only in digestion but also in the development of cells within the reproductive system, such as vitelline cells, spermatozoa and oocytes.