**ABSTRAKT**

*Fascioloides magna* (the giant liver fluke) originated from North America, is known in the Czech Republic since 1930s. This pathogenic fluke invades mostly cervids, but livestock too. Excretory-secretory products (ES products) contain number of essential biomolecules which are produced by excretory and secretory system of the fluke. These molecules play key role in many biological process during the life cycle not only of fascioloid flukes (e.g. migration in the host tissues, immune evasion and digestion). Due to their antigenic properties they could be also used in immunodiagnostics. Excretory-secretory proteins from adult *Fascioloides magna* and comparative related species *Fasciola hepatica* were purified and separated by the basic biochemical methods (1D, 2D electrophoresis, ion-exchange chromatography) and their activity was confirmed by specific (fluorogenic peptide) and nonspecific (gelatine) substrates. By using the mass spectrometry methods (MALDI TOF/TOF), the most abundant peptidolytically active proteins from ES products of *F. magna* were identified as cathepsin L (FmCL). Recombinant analog of FmCL was expressed in *Pichia pastoris* expression system. The peptidolytic activity was again confirmed using the synthetic fluorogenic substrates; the specificity of recombinant FmCL active site was fluorometrically analyzed. Due to known aminoacid sequence and 3D conformation of FmCL the synthetic antigenic peptide FmCL epitope was prepared. Antigenic properties of *F. magna*, *F. hepatica* ES-proteins, recombinant FmCL were confirmed also by immunochemical methods (Immunoblot, ELISA, Cova-Link ELISA). Antigenicity of synthetic peptide was confirmed by Cova-Link ELISA only. Immunolocalization of cathepsin L on histological slides of adult *F. magna* incubated with polyclonal antibodies against recombinant FmCL, which were raised in laboratory rats, was not successful.