

Abstract

The thesis summarises the fundamental technological solutions, processes and principles of mass spectrometry with special focus on their use in parasitology. In the first part, the particular phases of processing of the biological sample by using mass spectrometry are defined - from ionisation to the evaluation of results. In the text, the various methodological approaches are presented mainly on the published examples concerning the identification of molecules from parasitic helminths, especially proteins of fasciolid flukes (e.g. *Fasciola hepatica*). The second part of the thesis comprises the methods of identification and localization of molecules by using mass spectrometry imaging and the use of this combined technique in experimental biology, parasitology, is discussed. There is also proposed the procedure including the combination of laser microdissection and mass spectrometry techniques which could be applied for identification and localisation of important proteins of the fluke *Fascioloides magna*.