

Abstract

In my bachelor thesis I have dealt with the importance of using the laboratory animals (*in vivo* models) and artificial tissue (*ex vivo* models) for studying the superficial mycosis. The purpose of using these models is especially to clarify the pathogenesis of illness (the pathogen's penetration into the organism, the clinical, histopathological and immunological changes) or testing of new treatments. Selection of a suitable and susceptible model, methodics of preparation of the inoculum and preparation of the model before inoculation are crucial for the successful creation of the experiment. Small rodents (guinea-pig, mouse, rat), skin equivalents and keratin films made from human hair, nails and animal hooves are the most used *in vivo* and *ex vivo* models. This bachelor thesis summarizes their advantages and disadvantages. Furthermore, the work deals with the types of dermatophytes and thermally dimorphic fungi used for successful inoculation and with the specific purpose of their use. The dermatophytes (*Trichophyton*, *Microsporum*, *Epidermophyton*, *Arthroderma*) and thermally dimorphic fungi (*Blastomyces* and *Sporothrix*) are the most often researched originators of the superficial mycosis. Both groups cause the animal and human superficial mycosis, *Blastomyces* and *Sporothrix* can cause systemic diseases. Morphology and ecology of pathogens are summarized in the introductory chapter.

Key words: dermatomycosis, keratin, fungal infection, superficial mycosis, blastomycosis, sporotrichosis, animal model, histopathology, *ex vivo* model