

Abstract:

Phytochemicals are bioactive substances by which plants affect organisms in their vicinity. Fungi often respond to their presence by metabolism alternation, which is manifested by the production of secondary metabolites, an increase in biomass or the regulation of virulence. These changes can be caused by phytochemicals (e.g. curcumin, EGCG) with abilities to modulate epigenetic information. The first half of the work is devoted to mechanisms of epigenetic modification (e.g. methylation, histone modification), which were studied in fungi. The second half summarizes studies focused on phytochemicals, in which the ability to modify epigenetic information in eukaryotic organisms was observed. The bachelor's thesis thus brings valuable knowledge about the possibility of modifying fungal metabolism by phytochemicals, which are often waste products of industry. Information summarized in this work can have a significant impact on improving biotechnological processes, where there is an effort to increase biomass yield or induce the production of secondary metabolites in cases where their production is normally suppressed.

Key words: secondary metabolites, epigenetics, epigenetic modification, phytochemicals, filamentous fungi