

Abstract

The decomposition of bone tissue is a complex process in which bacterial enzymes play a crucial role. Enzymes are biological catalysts involved in all biochemical reactions in living organisms. In this bachelor thesis, bacterial enzymes involved in the breakdown of bone tissue are identified and characterized. The main focus is on various collagenases, which play a key role in the degradation of the organic components of bone. The work also describes the molecular mechanisms by which these enzymes operate. The thesis focuses on specific interactions between bacterial enzymes and the bone matrix, including adhesive interactions and enzyme synthesis responding to specific microenvironments of bone tissue. Factors such as pH, temperature, and the presence of potential inhibitors influence the activity of these bacterial enzymes. These factors contribute to the variability of decomposition processes. Subsequent understanding of the molecular mechanisms by which bacterial enzymes degrade bone tissue has significant applications in forensic science for estimating the time of death, in archaeology for interpreting historical and prehistoric finds, and in medicine, where this research may be important for the diagnosis and treatment of bone diseases.

Keywords:

Bacterial enzyme, bacteria, bone, collagen, decomposition, enzyme, enzyme activity, soft tissue