Nowadays, the challenge for the society is infections caused by drug-resistant bacteria fighting. Scientists are sounding the alarm about a spreading paralysis vision of modern medicine due to lack of effective antibiotics. They are looking for alternatives to combat pathogenic bacteria, and one of them suggested by nature itself, are bacteriophages. Bacteriophages (phages) are bacterial viruses, completely safe for humans. There is even 10^{31} particles in an environment including living organisms as well as humans. The advantage of bacteriophages over the synthetic antibiotics is that, they are highly specific and thus, do not destroy the man's "friendly" bacteria. Most phages are composed of a protein capsid inside which a nucleic acid is located, a tail and filaments. The tail and fibrils proteins are responsible for the bacteria identification, attaching to its surface and destroying the external components of the cell. Recently, much attention has been focused on the phage tail enzymes, which are responsible for the degradation of guards and the sugar components of the bacterial surface. Recent studies show, that there is a huge diversity of enzymes localized on phage tail. They are known as hydrolases polysaccharide chains and, interestingly, these enzymes have developed a completely new mechanisms of action in the course of evolution. For this reason, they are extremely interesting research topic. Therefore, the aim of the project is to characterize of tail *y.enterocolitica* phages proteins against pathogenic strains. Preliminary studies showed that the tail proteins, considered as structural ones, poses enzymatic activity. The project involves the examination and understanding the mechanism of action of these newly-discovered enzymes, determination of the substrate specificity, tertiary structure and to determine their activity against a wide pool of strains of pathogenic bacteria.