

Summary:

Endolysins are hydrolase used by most bacteriophages to enzymatically degrade the host bacterial peptidoglycan (PG) layer at the end of their lytic multiplication cycle. Recently, interest in phages has increased due to their antibacterial potential. Special attention has been paid to endolysins, which show their activity on very dangerous and resistant pathogens such as *K. pneumoniae*. This bacterium is associated with nosocomial infections. This bacterium is associated with nosocomial infections and can express pathogens including serum resistance, capsular polysaccharides, pili and siderophores. *K. pneumoniae* is dangerous opportunistic pathogen commonly found in hospitals and natural environments. Due to its high virulence and multidrug resistance, *K. pneumoniae* is a common pathogen associated with nosocomial infections that are difficult to combat and Kp27 is a natural enemy of bacteria and as a potential antimicrobial source for controlling Klebsiella infections. Endolysin Kp27 has a high heat resistance compared to other endolysins. Structurally, it has a globular shape and has 140 amino acids with a molecular weight of 15.88 kDa. In this study, molecular cloning of endogenous KP27 phage of Klebsiella bacterium was performed into pET28a expression plasmid. First, with the help of bioinformatics studies and tools, its gene and protein sequences were retrieved and then, cloned between two enzymes NcoI and XhoI in plasmid pET28a, and finally the accuracy of cloning was confirmed by sequencing. By cloning the gene encoding endolysin KP27, recombinant protein production can be achieved, which has many applications, including the control of nosocomial pathogens and food.

Key words: Endolysin, Bacteriophage, Infection, Enzymatic Antibiotics