

This thesis describes the structure and the assembly of the type II secretion system which is found in some gram negative bacteria such as *Vibrio cholerae*, *Pseudomonas aeruginosa*, *Legionella pneumophila* or *Klebsiella oxytoca* and which transports their exoproteins across the outer membrane. The thesis also presents some important substrates translocated by this system – toxins, enzymes and proteins involved in bacterial metabolism or motility – and hypothetical mechanism of the secretion. Conclusion is focused on the discovery of the secretion system in mitochondria of some protists and its importance for the research of the evolution of eukaryotic organisms.