Abstract

Type II secretion system (T2SS) is one of the secretion systems found in gram-negative bacteria that provides transport of some bacterial proteins across the outer membrane. The passage through the membrane is mediated by a pore assembled from subunits called GspD or secretin. Together with three other components of T2SS, GspD was discovered in the genome of several protists including *Naegleria gruberi, Andalucia godoyi, Reclinomonas americana, Neovahlkampfia damariscottae* or in s species of genus *Malawimonas*. Previously it was found out that these proteins localize into the mitochondria. If found functional and with analogous topology to the bacterial system, the eukaryotic T2SS would represent unique mitochondrial protein export system. Secretin is essential subunit of T2SS which is not only the passive membrane channel, but also participates in the recognition of the substrate. Therefore, the research of the eukaryotic secretin could bring a valuable knowledge about the function of the mitochondrial T2SS. The experimental part of this thesis tries to characterize the eukaryotic secretin and it focuses on (i) the assembly of the secretin channel, in both, the bacteria and in the artificial membranes, (ii) the interactions of GspD with the other subunits of T2SS and (iii) the mechanism of import of the secretin monomer into the mitochondrial outer membrane.