Plasmodium falciparum is one of the most dangerous human intracellular single-celled pathogen. This thesis describes the invasion, the survival and the egress of the pathogen from the host cell (erythrocyte). The main topic of the thesis is the parasite’s life within the host cell in a newly created compartment, parasitophorous vacuole. By exploding hundreds of proteins Plasmodium falciparum establishes number of unique modifications inside as well as on the surface of the host cell. The thesis finishes with the chapter on the therapy and possible development of new drugs and the chapter on the parasite evolution.