Abstract

Leishmania parasites have to overcome host immune defence mechanisms upon entering a vertebrate host and penetrating into the target cell – a macrophage where their development continues. The evolutionary strategy of leishmania parasites developed to evade immune system of the vertebrate is among others based on their surface glycoconjugates. The most important glycoconjugates are lipophosphoglycans, glyconoinositolphospholipids, metalloproteases gp63 and membrane-bound proteophosphoglycans, which help leishmania parasites to withstand lysis by complement, antimicrobial products of neutrophils, and mediate binding to macrophages. Intracellularly, they modulate signaling pathways that lead to the production of cytokines targeting the immune response polarization in favour of Th2. The result of this redirection is evasion of toxic NO effects leading to establishment of the chronicity of the infection. Glycoconjugates are extensively investigated as an efficient component in the development of vaccines to protect vertebrates from infection or to inhibit the reverse transfer to an invertebrate host and thereby prevent further infection spread.

Keywords: *Leishmania*, lipophosphoglycan, glycoinositolphospholipid, proteophosphoglycan, gp63, immune response, macrophage