

Abstract

Nitric oxide belongs to smallest known molecules. It has been known since the mid-17th century, but only in the second half of the 20th century its significance in medicine began to be discovered. Already in the 19th century, nitroglycerin was used to treat heart disease, and the connection with nitric oxide was later found. Nitric oxide works, for example, as a signaling molecule in biosystems, acts as a vasodilator in endothelial tissue but also has a number of pathophysiological effects. Because of its radical nature, it plays an important role in the immune system in the non-specific response. By reaction with certain radicals in the body, strong reactive compounds such as peroxynitrite can form. However, some intracellular parasites have been found to be able to resist the effects of the immune system associated with the NO molecule. They could, besides other things, serve proteins from the family of flavodiiron proteins to this purpose. At the end this review focuses on the group of flavodiiron proteins and the interaction of three parasites with the immune system of the host: *Entamoeba*, *Giardia* and *Trichomonas*.

Key words: Nitric oxide, NO synthase, macrophage, *Trichomonas vaginalis*, *Giardia intestinalis*, *Entamoeba histolytica*, flavodiiron protein