Reactive oxygen species are substances that contain an atom of oxygen with an unpaired electron. This substance is highly reactive thanks to that unpaired electron. Organisms are capable of utilizing this reactivity in a lot of reactions. Cells can create reactive oxygen species as a by-product of aerobic respiration or by the action of enzymes such as NADPH oxidase. Reactive oxygen species play a crucial role in host defense against parasitic organisms. During host defense, parasitic organisms are destroyed by immune cells utilizing oxygen species. These reactions are in place also in the case of infection caused by pathogenic amoebae. Amoebae are eukaryotic unicellular organisms that are in some cases capable of causing serious illnesses. During the infections, amoebae must be able to bypass the host immune system, thus reactive oxygen species. This is accomplished by parasitic detoxification systems which helps pathogenic amoebae to overcome oxidative stress induced by reactive oxygen species. However, pathogenic amoebae are also capable of using reactive oxygen species to overcome the host immune system. This fact only confirms how tangled and complicated is the effect of reactive oxygen species during an interaction between the host organism and parasite.