Activation of Nrf2 during *Leishmania infatum* infection in macrophages

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Currently, Leishmaniasis are prevalent in 98 countries in 5 continents. In these terms, Brazil receives great prominence, due prevalence of Visceral Leishmaniasis, and Cutaneous Leishmaniasis cases. Leishmaniasis diseases have in common the involvement of reactive oxygen species during macrophage/dendritic cells infections by parasites, and during the development and progression of amastigotes forms inside of host cells. For this reason, studies have been developed to better understand the involvement of reactive oxygen species in the mechanisms of these infectious diseases. Here, we investigate the activation of Nfr2 transcript factor in macrophages RAW-264.7 that were submitted to infection with *Leishmania infantum*. We evaluated translocation of Nrf2 transcript factor during first 24 hours after the infection with promastigotes forms. The activation of MAPKs as p38, ERK1/2, and SAPK/JN were evaluated due the involvement of these pathways in mechanisms of Nrf2 activation. Nrf2 immunocontent and MAPKs proteins were evaluated by western blotting. We found that *Leishmania infantum* infection induces translocation of Nrf2 transcript factor to nucleus. During time course evaluated in Nrf2 translocation, we observed an increase in translocation at 6 hours after infection by *Leishmania infatum.* In addition, we found that Leishmania infection induces the activation by phosphorylation of p38, ERK1/2, and SAPK/JNK. The peak of MAPKs activation was different. p38 phosphorylation presented peak at 30 minutes, while ERK1/2 phosphorylation peak was observed at 15 minutes. SAPK/JNK similarity to ERK1/2 presented peak of phosphorylation at 15 minutes. Our results demonstrated that during *Leishmania infantum* infection, the Nrf2 transcript factor, can be translocated to nucleus. We speculate that Nrf2 translocation may be mediated in macrophages by the activation of MAPKs, that consequently induces the translocation and activation of Nrf2 in this model. Moreover, the activation of Nrf2 may be a mechanism used for the parasite to improve the ability to survive inside of macrophages.

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