PARASITO2025
29º CONGRESSO BRASILEIRO DE PARASITOLOGIA

INVESTIGATING *LPG2* FUNCTION IN DENDRITIC CELL MIGRATION DURING *LEISHMANIA INFANTUM* INFECTION

BERNARDES, C.P.O.S [1].; DE AZEVEDO, B. H. [1].; NERY, G.N.G. [1]; PAIXÃO, A.R. [1]; SANTOS, F.H. J.[1]; GOICOCHEA, A.M.C. [1]; LUZ, Y.S. [1]; FARIAS, L.P. [1]; BORGES, V. [1]; DE MENEZES, J.P.B. [1].
1. INSTITUTO GONÇALO MONIZ, FUNDAÇÃO OSWALDO CRUZ (IGM/FIOCRUZ-;BA), SALVADOR - BAHIA - BRAZIL;

Abstract

Leishmaniasis is a zoonotic disease caused by *Leishmania* protozoa and can manifest in various clinical forms. The dissemination of the cells containing *L. infantum* are crucial for the parasite survival and establishment of the disease. Studies suggest that *Leishmania* lipophosphoglycan (LPG) plays a key role in host cell interactions; however, its relationship with dendritic cells (DCs) remains unclear. The objective of this work is to evaluate the role of *lpg2* in migration of human DCs infected with *L. infantum.* To investigate these interactions, human DCs were infected with wild-type *L. infantum*, Δ*lpg2,* or Δ*lpg2* + *lpg2* and analyzed using a Transwell system. Immunostaining was performed with antibodies against pFAK and pPaxillin to assess adhesion complex formation, Talin and Vinculin to evaluate podosome formation, and Rac1, Cdc42, Gelsolin, RhoA, and phalloidin to examine actin polymerization via confocal microscopy. CCR7 expression in DCs infected with different *Leishmania* strains was assessed by flow cytometry. Additionally, ERK1/2 pathway activation was evaluated by analyzing ERK1/2 expression using western blotting.The results showed that DCs infected with *L. infantum* Δ*lpg2* exhibited reduced migration compared to those infected with wild-type *L. infantum* or Δ*lpg2* + *lpg2*. This data was associated with the reduction in the formation of adhesion complexes, podosome and actin polymerization. Additionally, lower CCR7 and ERK1/2 expression was observed in DCs infected by *L. infantum* Δ*lpg2* compared to cells infected with the other strains. The data presented in this study suggest that *L. infantum* LPG modulates positively migration of DCs by enhancing adhesion complexes formation, podosome assembly, actin dynamics, as well as CCR7 expression and ERK1/2 pathway activation. Further experiments are needed to better elucidate the mechanisms by which LPG regulates DCs infected with *L.infantum.*

Supported by: Proep/IGM/2020 - Edital N° 01/2020
Keywords: *Leishmania*, dendritic cells, migration.