Characterization of dendritic cells present in the spleen and lymph nodes of mice infected with *Paracoccidioides brasiliensis*

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Introduction: Paracoccidioidomycosis (PCM), a disease caused by thermodymorphic fungus of *Paracoccidioides* genus, is a systemic mycosis with a granulomatous appearance described for the first time by Adolpho Lutz. PCM is restricted to Latin America, Brazil, Venezuela, Colombia and Argentina. Treatment of PCM is difficult, requiring prolonged treatment to achieve a successful outcome. Therefore, studies for new treatment proposals for PCM have been performed, and clinical and experimental data indicate that a cell-mediated immunity plays significant role in host defense against *Paracoccidioides* infection. Experimental studies have shown that infection with *P. brasiliensis* activates dendritic cells (DCs) and induces their migration to lymphatic nodules, for later activation of a protective immune response.
Materials and Methods: In the present study, lymphoid organs (spleen and lymph nodes) of BALB/c mice infected or not with *P. brasiliensis* were excised and macerated, and cells obtained were labeled for analysis of DC activationby flow cytometry.
Results: We observed higherlevels of dendritic cells in the spleen and lymph nodes of infected mice when compared to spleen and lymph nodes of uninfected mice. In addition, $CD11c^{+}MHCII^{+}CD8^{+}$ and $CD11c^{+}MHCII^{+}CD8^{-}$ DCs showed more mature profile in lymph nodes of the infected mice, with increased CD40, CD80, CD86 markers.
Discussion: DCs are professional antigen-presenting cells that migrate to lymphoid organs, where they present antigens to T cells. Dendritic Cells $CD8^{+}$ can induce a cytokine response that forms a favorable environment for the development of a Th_1 profile response, while $CD8^{-}$ DCs tend to induce a Th_2 profile response. After antigen uptake, DCs migrate to secondary lymphoid organs and undergo a maturation process that is characterized by increased expression of costimulatory molecules (CD40, CD80, CD86).
Conclusion: Our results demonstrate the importance of the participation of DCs in the immune response against paracoccidioidomycosis.

Keywords: Paracoccidioidomycosis; *Paracoccidioides brasiliensis*, Dendritic cells