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The role of B-1 cells in reducing susceptibility to oral infection by *Encephalitozoon cuniculi*

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Microsporidia are intracellular pathogens that cause severe disease in immunocompromised humans and animals. We recently demonstrated that XID mice are more susceptible to *Encephalitozoon cuniculi* infection by peritoneal route, evidencing the role of B-1 cells in the resistance against infection. The present study aimed to evaluate the mechanisms of resistance and susceptibility against *E. cuniculi* oral infection, including the role of B-1 cells, using BALB/c and BALB/c XID mice. We used flow cytometry to characterize the immune cells in the peritoneal cavity, spleen and Payer's patches and also to quantify the serum levels of Th1, Th2, Th17 profile cytokines. Moreover, histopathology was performed in the intestines, lungs and liver. No clinical symptoms were observed in infected animals but histopathological analysis revealed lymphoplasmocytic enteritis with degeneration of the apexes of the villi in all infected groups. Higher parasite burden was observed in infected BALB/c XID mice. In the spleen, all infected mice showed a decrease of B-2, T CD4+ and T CD8+ cells. B-1 and B-2 cells decreased in the peritoneal cavity of infected BALB/c XID and XID+B-1 mice. Macrophages increased only in infected BALB/c mice. Pro-inflammatory cytokines increased mostly in infected XID+B-1 mice. Together, the present results demonstrated that BALB/c XID mice were more susceptible to encephalitozoonosis and, also, the B-1 cells role in the control of the immune response against *E. cuniculi* oral infection.

Biography

Adriano Pereira is a Teacher in the areas of health and biological sciences at São Camilo University, São Paulo, Brazil. He has done Master's degree in Veterinary Medicine and PhD in Environmental and Experimental Pathology. His research involves studying microsporidia with a focus on biology and immune response against this emerging and opportunistic pathogen.

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