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CD4+ T-cell proliferation after co-culture of human neutrophils challenged with *Paracoccidioides brasiliensis* with dendritic cells: Crosstalk between neutrophils and dendritic cells

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Paracoccidioidomycosis is a systemic mycosis, endemic to most Latin American countries, especially in Brazil, whose etiologic agent is the thermo dimorphic fungus of genus *Paracoccidioides*, comprising cryptic species of *Paracoccidioides brasiliensis* (Pb), S1, PS2, PS3 and *Paracoccidioides lutzii*. Studies aiming to characterize the immune response of the infected host have focused on the role of different subsets of CD4+ cells with special interest for the mechanisms involved in the preferential induction of either of them, which are largely dependent on the initial interaction of the fungus with cells of the innate immune response. Neutrophils were recently shown to influence the activation of different leukocyte types including NK cells, B cells and DCs. Therefore, neutrophils by regulating DCs recruitment and activation may have an important role in the development of adaptive immune response. Here, we aimed to evaluate whether human PMNs sensitized with the fungus are able to modulate DCs capacity to induce naïve CD4+ T cells proliferation. Peripheral blood PMNs obtained from 9 healthy donors were sensitized with Pb18 and/or Pb265 for 48 hours, co-cultured with autologous DCs by 48 hours followed by co-culture with autologous CD4+ cells by 120 hours. Phytohemaglutinin (PHA) was used as positive control to CD4+ cells proliferation. We found that neutrophils sensitized with Pb18 or Pb265 activate DCs to induce an intense CD4+ cells proliferation. We concluded that a crosstalk between neutrophils and DCs may be very important for induction of the host adaptive immune response against *P. brasiliensis*.

Biography

Daniela Ramos Rodrigues has completed her PhD in 2013 from the Universidade Estadual Paulista. She is currently a Postdoctoral fellow from the same university and immunology paracoccidioidomycosis is her main area of research.

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