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Molecular diagnosis of human visceral Leishmaniasis

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Visceral leishmaniasis (VL) is an endemic and high mortality rate disease detected in around 65 countries, including Brazil. Three hundred and fifty million people are in the risk area and five hundred thousand new cases arise each year. Among the Brazilian area, the north of Minas Gerais state is considered high risk area. Mortality and severity of VL can be prevented with correct diagnosis, resulting in appropriate treatment. The definitive VL diagnosis is the demonstration of amastigotes parasite cells (Giemsa-stained slides) in splenic smears (sensitivity from 95% to 98%) or bone marrow aspirates (sensitivity from 53% to 95%). The Serology-based tests, such as rK39 ELISA and dipstick have high sensitivities and specificities but are not able to discriminate between past and current infections. The molecular diagnosis of VL by PCR on blood samples is an alternative method that presents high sensitivity and specificity. Therefore, efforts have been made to develop PCR methods using peripheral blood instead of bone narrow aspirates or splenic smear. We have been designing and testing specific primers to rRNA 18S and kDNA to be used as tool for VL diagnosis. Our results are very optimistic (sensitivity of 92%). The detection of DNA from parasite after VL treatment could be of great importance in the diagnosis, since it can be regarded as an important marker for healing. The molecular diagnosis of VL is a project performed by State University of Montes Claros and supported by University of Brasilia. The Ethical clearance for this project was obtained.

Biography

Alessandra R E de O Xavier has completed her PhD at University of Brasilia and she has been attempting Post-Doctoral studies at Federal University of Minas Gerais. She worked in the QC Microbiology at Novo Nordisk, where she had experience in Industrial Microbiology acting on: Validation of microbiological analytical methods, writing standard operating procedures, training in microbiological methods, qualification of equipment and Rapid Microorganisms Identification methods. She also has experience in teaching in higher education, mainly teaching and researching in the Microbiology and Molecular Biology areas, focusing on diagnostics methods. She has been member of the validation committee at Novo Nordisk, as well as Director of Research and Ethics Committee's member at University. She is expert in rapid methods for microorganism's identification and molecular diagnostic of diseases. Currently, she is a Professor in the Medicine Graduation and Biotechnology post-graduation courses at State University of Montes Claros.

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