

## **A proteomics developed in *Leishmania amazonensis* reveals proteins related to the infectivity of the parasites**

Eduardo A.F. Coelho<sup>1,2</sup>; Rubens D.M. Magalhães<sup>3</sup>; Mariana C. Duarte<sup>1,2</sup>; Eliciane C. Mattos<sup>4</sup>; Vívian T. Martins<sup>1</sup>; Daniela P. Lage<sup>1</sup>; Lourena E. Costa<sup>1</sup>; Miguel A. Chávez-Fumagalli<sup>1</sup>; Beatriz C.S. Salles<sup>1</sup>; Thaís T.O. Santos<sup>1</sup>; Daniel S. Dias<sup>1</sup>; Patrícia A.F. Ribeiro<sup>1</sup>; Fernanda F. Ramos<sup>1</sup>; Mariana P. Lima<sup>1</sup>; Danniele L. Vale<sup>2</sup>; Grasielle S.V. Tavares<sup>1</sup>; Débora V.C. Mendonça<sup>1</sup>; Maria J.M. Alves<sup>4</sup>; Carlos A.P. Tavares<sup>3</sup>; Ronaldo Nagem<sup>3</sup>

<sup>1</sup>Programa de Pós-Graduação em Ciências da Saúde: Infectologia e Medicina Tropical, Faculdade de Medicina and <sup>2</sup>Departamento de Patologia Clínica, COLTEC, UFMG, Brazil. <sup>3</sup>Departamento de Bioquímica e Imunologia, ICB, UFMG, Brazil. <sup>4</sup>Departamento de Bioquímica, Instituto de Química, USP, Brazil.

The present study analyzed whether or not the *in vitro* cultivation for long periods of time of pre-isolated *Leishmania amazonensis* from lesions of chronically infected BALB/c mice was able to interfere in the parasites' infectivity using *in vivo* and *in vitro* experiments. In addition, the proteins that presented a significant decrease or increase in their protein expression content were identified applying a proteomic approach. Parasites were cultured *in vitro* for 150 days. Aliquots were collected on the day 0 of culture (R0), as well as after ten (R10; 50 days of culture), twenty (R20; 100 days of culture), and thirty (R30; 150 days of culture) passages, and were used to analyze the parasites' *in vitro* and *in vivo* infectivity, as well as to perform the proteomic approach. Approximately 837, 967, 935, and 872 spots were found in 2-DE gels prepared from R0, R10, R20, and R30 samples, respectively. A total of 37 spots presented a significant decrease in their intensity of expression, whereas a significant increase in protein content during cultivation could be observed for 19 proteins (both cases >2.0 folds). Some of these identified proteins can be described, such as diagnosis and/or vaccine candidates, while others are involved in the infectivity of *Leishmania*. It is interesting to note that six proteins, considered hypothetical in *Leishmania*, showed a significant decrease in their expression and were also identified. The present study contributes to the understanding that the cultivation of parasites over long periods of time may well be related to the possible loss of infectivity of *L. amazonensis*. The identified proteins that presented a significant decrease in their expression during cultivation, including the hypothetical, may also be related to this loss of parasites' infectivity, and applied in future studies, including vaccine candidates and/or immunotherapeutic targets against leishmaniasis.

**Keywords:** Proteomics; leishmaniasis; *Leishmania amazonensis*; infectivity; proteins; vaccine.

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