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A PROTEOMIC APPROACH TO ACUTE AND CHRONIC PHASE OF CHAGAS DISEASE

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Introduction: The protozoan parasite *Trypanosoma cruzi* is the etiological agent to Chagas disease (CD), a chronic illness endemic in Latin America, with 18 million people infected and over 90 million at risk. The CD is characterized by two major clinical forms: acute and chronic. The acute form is directly related with the parasite multiplication into macrophage and cardiac muscle cells. The chronic form is associated with myocardial hypertrophy, and myocyte degeneration. The search for differences in gene expression and biochemical properties among parasite isolated of individual with different clinical forms may lead to better characterize the role of *T. cruzi* in the development of the different clinical forms of CD.

Objectives: To determine the differential expression of *T. cruzi* obtained from patients with acute and chronic form of CD in order to correlate them with the different clinical forms.

Materials and Methods: The *T. cruzi* epimastigotes were cultured in LIT medium supplemented with 10% FCS and maintained at 28°C. The differential expression of proteins of whole-cell lysated from epimastigotes was processed by 2D electrophoresis and analyzed with PD QUEST software.

Results: 416 and 390 spots were detected on isolates of chronic and acute patients, respectively. 27 spots were present specifically in the chronic isolate patient while 25 spots were found only in the acute. Based in Mr and pI values we can observe differential expression between two relevant proteins, glyceraldehyde 3 phosphate dehydrogenase (GAPDH) and thioredoxin. These proteins must be confirmed with mass spectrometry (MS).

Conclusions: We suggested that presence of thioredoxin in the chronic isolate could be associated with the parasite survival into the host cell. On the other hand, the GAPDH, a metabolic enzyme, with higher expression in isolated acute could is related with a major virulence.

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