

Riboproteomic applied to the study of post-transcriptional regulation in *Leishmania braziliensis*

Cesar Ramirez¹, José María Requena² and Concepción J Puerta¹

¹Pontificia Universidad Javeriana, Colombia

²Universidad Autónoma de Madrid, Spain

Post transcriptional regulation is vital for controlling gene expression in trypanosomatids [1, 2]. This control is ruled by mRNA features that contribute to RNA maturation, stability and translation [1, 3] and results from specific RNA/protein interactions [4]. Mapping efforts for identifying RNA cis-elements in *Leishmania* and trypanosomes have shown that regulatory elements are mainly located on the 3' non-translated regions (UTRs) and, although, the 5' UTR is also involved, it plays a secondary role [1, 5]. Identification and characterization of RNA binding proteins could lead to the discovery of new targets for drug design as well as to a greater understanding of posttranscriptional mechanisms in trypanosomatids. Consequently, our rationale was to study the RNA/protein interactions involved in the expression of the heat shock protein-70 (HSP70), an important virulence factor of *Leishmania* [6, 7]. Using the HSP70 5' and 3' UTRs as baits, a search of *L. braziliensis* HSP70 trans-acting factors was performed through RNA/protein pull down strategy followed by two dimensional gel electrophoresis and mass spectrometry identification of protein spots. Proteins related to RNA metabolism and translation process as elongation factor EF-1 α , elongation factor 2, a conserved hypothetical protein (with some sequence similarity with the translation initiation factor 3 subunit K), putative eukaryotic initiation factor 4 α , putative eukaryotic translation initiation factor 5, and putative poly(A)-binding protein 2 and 3 were identified. Moonlight proteins, unrelated with posttranscriptional control, as glycolytic enzymes were also found. Future experiments will confirm the involvement of these proteins in HSP70 mRNA expression and reveal the importance of these molecules for parasite survival.

Biography

Cesar A. Ramirez earned his Biologist from Universidad del Tolima in 2005 and after was research assistant in Dr. Gustavo Vallejo's laboratory, then he worked as a younger research in CIDEIM (Centro Internacional de Entrenamiento e Investigaciones Médicas), with Dr. Nancy Gore Saravia's orientation. And nowadays is aspirant to Ph.D in biological sciences under Dr. Concepción J. Puerta's Guidance.