# Identification of native Ribose 5-Phosphate Isomerase from *Leishmania major*

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Leishmaniasis is a widespread disease that is endemic in several parts of the world and is caused by some species of *Leishmania* genera. There are drugs that are being used to treat this disease, but the parasite is becoming resistant to many of them. Then, it is essential importance the development of new effective drugs against this parasite. We used AnEnPi (a computational tool for detection of analogy) for the identification of possible drug targets, based on the structural differences of enzymatic activities shared by humans and *Leishmania major.* One of these enzymes is ribose-5-phosphate isomerase (R5PI) that catalyzes an important step of pentose phosphate pathway. Our group has already cloned the R5PI gene from *L. major* in pBadThio/TOPO® vector, expressed the protein in insoluble form, purified it and produced polyclonal antibodies against the protein. We also have cloned this gene in pET SUMO® vector. We got some clones that showed the recombinant protein in the soluble fraction of the *E. coli* lysate. Those proteins are in process of purification and structural analysis. For identification of native enzyme we performed a 2D-PAGE with soluble proteins from *L. major* promastigotes, followed by western-blot using our polyclonal antibodies. We identificated a spot with MW = 18.27 and PI = 6.52, that are very close to expected values (18.61 and 6.40 respectively). Our data corroborates with genomics annotation, showing that this enzyme is expressed at least in promastigotes of *L. major*. Future works will be done to try finding the mRNA from this gene and to make immunocitochemistry assays.

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