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Towards structural studies of trypanosoma target proteins

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The trypanosoma species include human pathogens, most notably Trypanosoma brucei, which causes sleeping sickness (African trypanosomiasis) and Trypanosoma cruzi, which causes Chagas disease (American trypanosomiasis). These diseases occur in developing regions in the world and have a devastating effect on the economic viability in these regions. The diseases also occur in developped countries, and in particular in Spain, due to the high mobility of the population. The currently available chemotherapies are not satisfactory due to serious side effects, low efficacy and recently emerging resistance. We aim to provide structures of three proteins that are viable targets for therapeutic intervention in trypanosome. Two of these are from T. cruzi and are involved important metabolic pathways of this organism. The third protein is involved in the unloading of replication factors from the DNA in T. brucei during the final stages of DNA replication. We describe the purification of two of the selected targets and small angle scattering measurements (SAXS) on one of them. Furthermore, we will discuss the progress in crystallizing these proteins.

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