

The structure of 2B09 from *Trypanosoma cruzi*, a hypothetical protein with a thioredoxin fold

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Chagas' disease is caused by *Trypanosoma cruzi*, a pathogenic protozoan with a complex life cycle involving two hosts and at least three distinct developmental stages. 2B09 belongs to a group of proteins selected for structural and functional studies that were annotated in *Trypanosoma cruzi* CL Brener genome as hypothetical and whose mRNA were shown to be differentially expressed during the *T. cruzi* life cycle. The 2B09 protein was expressed in *Escherichia coli* with an N-terminal his-tag and purified by affinity chromatography and gel filtration. The his-tag was removed by TEV protease digestion and crystals of 2B09 were grown by the sitting-drop vapour-diffusion method as a cluster of plates. The best dataset collected resulted in a maximum resolution of 1.50 Å for a single plate cryoprotected with 10% ethyleneglycol. The crystal belongs to space group $P2_12_12_1$ with unit cells parameters $a = 35.04$, $b = 50.32$, $c = 61.18$. Molecular replacement was carried out using the region A364-G484 of protein disulfide isomerase from yeast (PDB code 2B5E) as a search model. This data has been used for the refinement of the model. 2B09 has serines replacing the catalytic cysteines and therefore can not function as an oxidoreductase thioredoxin. Details of the structure shall be presented.

Trypanosoma cruzi, 2B09, thioredoxin, crystallographic structure.

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