

# Pentamidine exerts in vitro and in vivo anti *Trypanosoma cruzi* activity and inhibits the polyamine transport in *Trypanosoma cruzi*

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Pentamidine is an antiprotozoal and fungicide drug used in the treatment of leishmaniasis and African trypanosomiasis. Despite its extensive use as antiparasitic drug, little evidence exists about the effect of pentamidine in *Trypanosoma cruzi*, the etiological agent of Chagas' disease. Recent studies have shown that pentamidine blocks a polyamine transporter present in *Leishmania major*; consequently, it might also block these transporters in *T. cruzi*. Considering that *T. cruzi* lacks the ability to synthesize putrescine de novo, the inhibition of polyamine transport can bring a new therapeutic target against the parasite. In this work, we show that pentamidine decreases, not only the viability of *T. cruzi* trypomastigotes, but also the parasite burden of infected cells. In *T. cruzi*-infected mice pentamidine decreases the inflammation and parasite burden in hearts from infected mice. The treatment also decreases parasitemia, resulting in an increased survival rate. In addition, pentamidi