SB-431542, A TRANSFORMING GROWTH FACTOR b INHIBITOR, IMPAIRS *TRYPANOSOMA CRUZI* INFECTION IN CARDIOMYOCYTES AND PARASITE CYCLE COMPLETION

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The anti-inflammatory cytokine, transforming growth factor β (TGF-β), plays an important role in Chagas disease, a parasitic affection caused by the protozoan *Trypanosoma cruzi* (*T. cruzi*). The aim of the present study is to investigate the use of SB- 431542, an inhibitor of the TGF-β type I receptor (ALK5), during the in vitro *T. cruzi* infection in cardiomyocytes. Our results show that SB-431542 inhibits *T. cruzi*-induced activation of the TGF-β pathway in epithelial cells and in cardiomyocytes. Further, we demonstrate that addition of SB-431542 greatly reduces cardiomyocyte infection by *T. cruzi*. Finally, SB-431542 treatment also strongly reduces the number of parasites per infected cells and the trypomastigote differentiation and release. Taken together, these data further confirm the major role of the TGF-β signaling pathway in both *T. cruzi* infection and *T. cruzi* cell cycle completion. Our present data demonstrate that small inhibitors of the TGF-β signaling pathway might be very useful pharmacological tools for the treatment of Chagas disease. Acknowledgements: INSERM/ FIOCRUZ, Faperj/ FIOCRUZ, CEA and CNPq. Key words: TGF-β , SB 41542, *T. cruzi* infection.