Biotherapeutic produced from serum of refractory to *Trypanosoma cruzi* animal increases survival in mice infected with the protozoan.

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Trypanosoma cruzi infection affects approximately eight million people from the Southern United States to Southern Argentina¹, with 1.5 million of them in Brazil. The lack of an effective medication for the causative treatment of this infection arouses the interest of many researchers. Considering the data obtained by our team regarding the effects of biotherapeutic in murine infection with *T. cruzi*²⁻⁷, the relationship of the effects of biotherapeutic with the biological material used and the species from which this material is collected, the resistance or susceptibility of this species against the pathology to be treated²⁻⁷, and the refractoriness of birds⁸ to *T. cruzi*, in this study we evaluated the effects of ultradiluted serum of *Gallus gallus domesticus* on the treatment of mice infected with *Trypanosoma cruzi*. **Methodology:** In a blind, controlled and randomized assay, 21 male Swiss mice, eight weeks-old, were allocated into three groups: **CI:** infected animals without treatment (n=7); **Alcohol13cH:** infected and treated with alcohol 13cH animals (n=7); **Serum13cH:** infected and treated with serum of *Gallus gallus domesticus* 13cH animals (n=7). The Infected animals were inoculated with 1400 blood trypomastigotes of *T. cruzi*-Y strain. Medications were prepared from uninfected serum of *Gallus gallus domesticus* according Brazilian Pharmacopoeia Homeopathy⁹ and administered two days before infection and on days 2, 5 and 8 after infection. The medication was diluted in the drinking water at concentration of 1% and offered *ad libitum* overnight. The groups were evaluated regarding survival period up to 161 days (endpoint). The project was submitted to the Ethics Committee CEUA Nº 2401220716. **Results:** Data are presented in Figure 1. The animals that received treatment with *Gallus gallus domesticus* serum 13cH (Serum 13cH) had higher survival rate (p<0.05) (40.0%) up to the endpoint (161 days). The animals in CI and Alcohol 13cH groups presented 100% mortality between days 15 to 20 after infection. **Discussion:** Considering the high mortality of animals infected with the Y strain of *T. cruzi* and untreated,²⁻⁴ the survival rate achieved with the biotherapeutic Serum13cH represents an exciting result, and corroborates the findings of Ferraz², with beneficial modulation of infection. The high mortality observed in the group treated with Alcohol 13cH, preparation vehicle of the biotherapeutic, strengthens the possibility that resistance information in serum of *Gallus gallus domesticus* are transferred to the mice that receive treatment, providing increased survival. **Conclusion:** Treatment with biotherapeutic produced from serum of refractory animals to *T. cruzi* promotes

beneficial response with increased survival, providing hope in the treatment of the disease, and becoming an important tool for understanding the effects of homeopathic medications.

Figure 1: Survival analysis of male Swiss mice, eight weeks old, infected with *Trypanosoma cruzi* (Y strain), subjected to different treatments. **CI:** infected and untreated animals; **Alcohol13cH** infected animals and treated with alcohol 13cH; **Serum13cH:** infected animals and treated with chicken serum 13cH. *CNI presents 100% survival.

Keywords: *Trypanosoma cruzi*; High dilutions, *Gallus gallus domesticus* serum, Survival time.

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