5,5′-Dithiobis-2-nitrobenzoic acid (DTNB) as a new drug for tick control in rabbits


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Introduction: Ticks are haematophagous arthropods responsible for major economic losses and public health impacts. These organisms are responsible for the transmission of a variety of etiological agents as Babesia spp. and Rickettsias spp. Rhipicephalus sanguineus (brown dog tick) is widely distributed and probably the most prevalent Ixodidae specie in the world and can feed in rabbit and other mammals. The present work analysed the effects of 5,5'-Dithiobis-2-nitrobenzoic acid (DTNB) in vivo in rabbits and R. sanguineus. Material and Methods: The potential therapeutic for DTNB was evaluated in rabbits and R. sanguineus. Initially, different doses of DTNB were injected subcutaneously in healthy male rabbits. Clinical, enzymatic and histopathological analyses were performed before and after DTNB administration. Additionally, the R. sanguineus were fixed in the rabbits for feeding. After feeding, these ticks were incubated at 27 ± 1°C in relative humidity (above 70%) and the rate of oviposition was analysed. Results and Discussion: Notably, in rabbits no significant differences were observed in any DTNB dose used. In addition, ticks fed on rabbits which received dose of 145 mg.Kg-1 DTNB, have their oviposition reduced. Conclusion: Further studies will be conducted to confirm the effects of DTNB in rabbits and ticks. However, these preliminary results show effects of DTNB in tick but not observed in rabbits.

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