

## SUMMARY OF THESIS

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SANTOS, Sérgio Vieira dos - Alterações comportamentais em *Rattus norvegicus* experimentalmente infectados por *Toxocara cati* ou *canis*. São Paulo, 2010. (Dissertação - Instituto de Medicina Tropical de São Paulo da Universidade de São Paulo).

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### BEHAVIORAL CHANGES IN EXPERIMENTALLY INFECTED *Rattus norvegicus* BY *Toxocara cati* OR *T. canis*

*Toxocara canis* and *T. cati* are parasitic nematodes of dogs and cats, transmitted by the ingestion of embryonated eggs, by the transmammary and transplacental routes or by predation of paratenic hosts harboring third-stage larvae in their bodies. The transplacental route occurs only in *T. canis* infection. Many parasites have mechanisms to change the host's behavior in order to ensure their transmission. Several researchers have demonstrated the occurrence of behavioral changes, using mice as a model of paratenic host for *T. canis*. However, there are no studies on the occurrence of changes in behavior of *Rattus norvegicus* experimentally infected with *T. cati*. The aims of this study were to investigate the distribution of *T. cati* larvae in *R. norvegicus* and determine the myotropic and neurotropic phases in the infection of this parasite, and to compare behavior of male and female rodents experimentally infected with either *T. canis* or *T. cati*, in the acute and chronic periods of infection. The variables measured were: anxiety, motor activity and muscle strength. Initially we used 21 rats aged eight weeks, infected with 300 eggs of *T. cati*. On days 3, 5, 8, 10, 15, 30 and 60 post-infection three animals were killed to count the larvae in the organs and muscle. In the second experiment 50 females and 50 males of *R. norvegicus*, with six to eight weeks of age were used. For each sex the animals were divided into three groups: *T. canis* - 20 rats infected with 300 eggs of *T. canis*, *T. cati*

-20 rats infected with 300 eggs of *T. cati* and control - 10 rats infection free. On days 5, 15, 40 and 70 post-infection, the infected animals and control groups were submitted to evaluation of behavioral variables and determination of forepaws' muscle strength. It was verified that the neurotropic phase of larvae occurred mainly in the 15<sup>th</sup> dpi and 30 dpi. Myotropic phase occurred during all experimental period, but especially 15<sup>th</sup> and 60<sup>th</sup> dpi. In regard to muscle strength in females, a significant difference in the three groups was observed only after 40<sup>th</sup> post-infection. In males there was significant difference among the three groups throughout the experiment. In the behavioral variables, only the female of the group infected with *T. canis* showed significant differences after 40<sup>th</sup> dpi when compared to control group. Males showed no significant differences in the performance evaluation. It can be concluded that *T. cati* migration behavior was different, *R. norvegicus* regardless of sex showed greater decrease in muscle strength when infected with *T. cati* and only infected females by *T. canis* showed behavioral changes remaining more time under conditions of exposure in the open field.

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