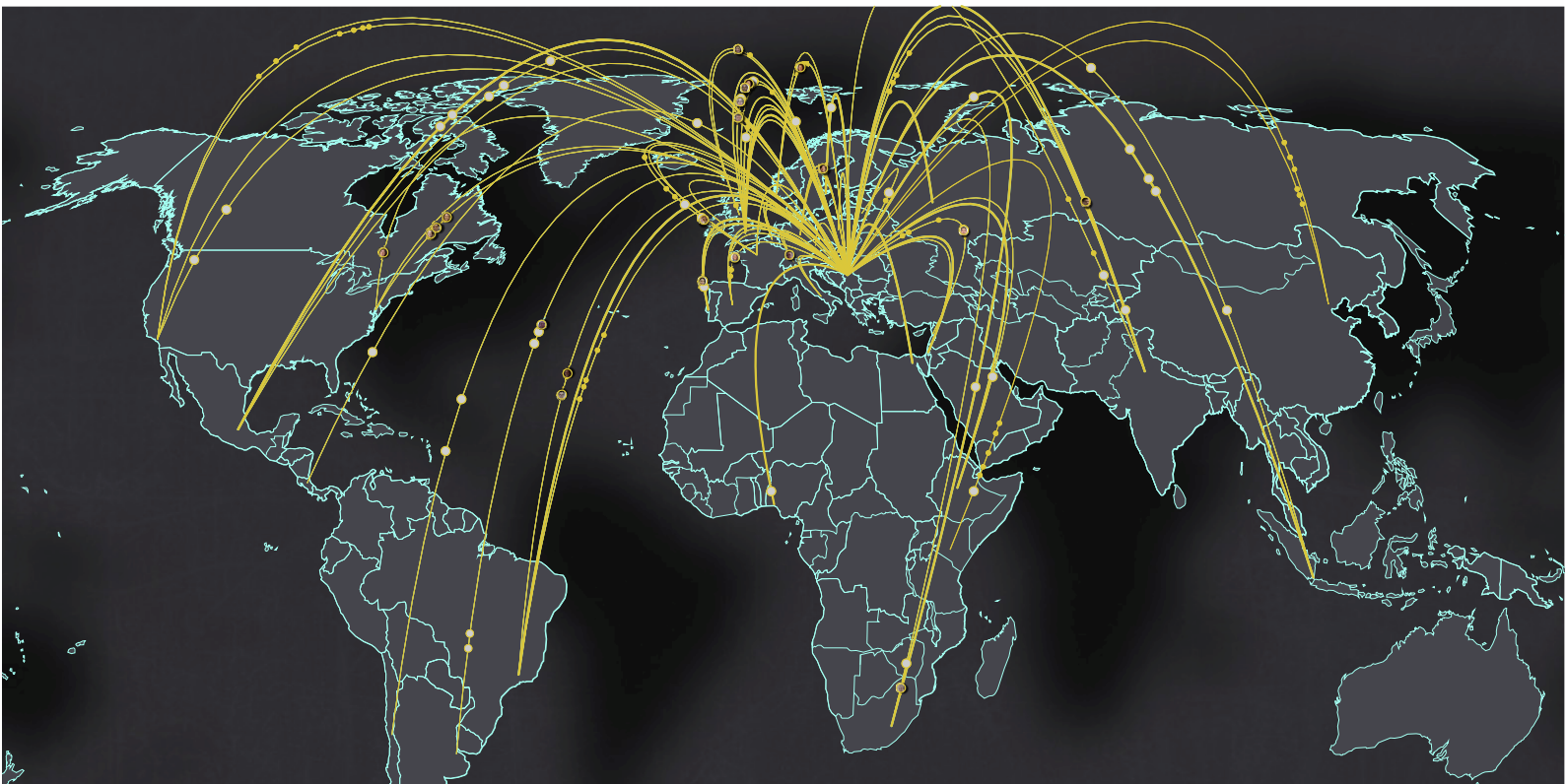


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**BOOK
OF
ABSTRACTS**

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TICK AND PARASITE IMMUNITY

IN VITRO FUNCTIONAL ACTIVITY OF NEUTROPHILS AND LYMPHOCYTES OF DOGS WITH ACUTE *BABESIA CANIS* INFECTION

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Babesia canis is an intraerythrocytic tick-borne Apicomplexa. Infected dogs develop sterilizing immunity or the infection becomes persistent. Seven to 15 days after a tick bite, dogs display an acute phase response with fever, inappetence and pancytopenia. However, functional activity of neutrophils and lymphocytes in the peripheral blood of the infected dogs has not been investigated.

The study included a total of 14 dogs: seven with acute *B. canis* infection and seven healthy dogs. The leukocytes in the heparinized blood were stimulated with Concanavalin A (ConA) and three concentrations of soluble Pirodog® vaccine *B. canis* antigen. Before performing functional tests, samples were incubated for 24 hours in a 5% CO₂ humidified atmosphere. Indicators of neutrophilic activity were positive nitroblue tetrazolium (NBT) test, phagocytosis of zymosan, and secretion of matrix metalloproteinase-9 (MMP-9). Marker of the lymphocytes' activity was production of interferon-gamma (IFN γ) and monocyte chemoattractant protein-1 (MCP-1).

Under all stimulatory conditions, percentage of NBT positive neutrophils and those engulfing zymosan was higher in the *B. canis* infected dogs than in the healthy ones, indicating a larger capacity of reactive oxygen species production and pathogen removal. In line with this, neutrophils of *B. canis* positive dogs secreted more proMMP-9 and active MMP-9. Further, lymphocytes of the infected dogs released more IFN γ and MCP-1. The response of T lymphocytes to ConA was preserved in the diseased dogs.

Acute phase response in dogs infected with *B. canis* is characterized with preserved and even stimulated functional activity of neutrophils and lymphocytes.

Key words: babesiosis, dogs, functional, activity, leukocytes

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