



# HOKKAIDO UNIVERSITY

Title	INFLUENCE OF MOUSE PINWORM (SYPHACIA OBVELATA) INFECTION ON THE IMMUNE SYSTEM
Author(s)	SATO, Yukita
Citation	Japanese Journal of Veterinary Research, 41(1), 45-45
Issue Date	1993-05-27
Doc URL	<a href="https://hdl.handle.net/2115/2436">https://hdl.handle.net/2115/2436</a>
Type	departmental bulletin paper
File Information	KJ00002377649.pdf



INFLUENCE OF MOUSE PINWORM (*SYPHACIA OBVELATA*) INFECTION  
ON THE IMMUNE SYSTEM

Yukita SATO

*Department of Parasitology,  
Faculty of Veterinary Medicine,  
Hokkaido University, Sapporo 060, Japan*

Antibody response to infection with mouse pinworm *Syphacia obvelata* was studied in AKR/J mice using an enzyme-linked immunosorbent assay (ELISA). Mice were orally infected with pinworm eggs and their sera checked for antibodies. Uninfected mice kept under specific-pathogen-free conditions in a different animal room were used as controls. Antibodies to *S. obvelata* somatic antigens were detected on day 12 post-infection in infected mice, and increased thereafter. The antibody titer corresponded closely to the number of worms recovered. The sera of mice infected with *S. obvelata* showed cross-reaction with the antigens of other *Syphacia* species, namely, *S. muris* and *S. mesocriceti*, but not with *Aspiculuris tetraptera*. *S. muris* was obtained from rats, *S. mesocriceti* from hamsters and *A. tetraptera* from Mongolian gerbils. Soluble somatic antigens of the four nematodes were analyzed by SDS-polyacrylamide gel electrophoresis (SDS-PAGE). The three *Syphacia* species showed similar band patterns, which differed from those of *A. tetraptera*. Western-blotting with sera of *S. obvelata*-infected mice showed a 76KDa band with *S. obvelata* antigen and a 45KDa band with *S. mesocriceti* antigen. Evaluation of the antibody response to sheep red blood cells (SRBC) was carried out in both *S. obvelata*-infected mice and uninfected mice. Antibodies to SRBC were detected by ELISA in both infected and uninfected mice on day 8 after immunization. However, infected mice showed a significantly higher antibody response than uninfected mice from day 12 after immunization.

This study showed that specific antibodies against *S. obvelata* were produced in infected mice. Since the immune system of *S. obvelata*-infected mice may become primed by the worm antigens, the immune response to the stimulus of other antigens may be enhanced. It is suggested that parasitic infections which do not produce apparent clinical symptoms may modulate the immune response of the host.