

EXPERIMENTAL INFECTION WITH *PARAGONIMUS HETEROTREMUS* METACERCARIAE IN LABORATORY ANIMALS IN MANIPUR, INDIA

T Shantikumar Singh¹, Hiromu Sugiyama², Kh Ranjana Devi³, L Deben Singh⁴,
Sutheewan Binchai⁵ and Achariya Rangsiruji⁵

¹Department of Microbiology, Sikkim Manipal Institute of Medical Sciences, Sikkim, India; ²Department of Parasitology, National Institute of Infectious Diseases, Tokyo, Japan; ³Department of Microbiology, Regional Institute of Medical Sciences, Manipur, India; ⁴Department of Physiology, Sri Sathya Sai Medical College and Research Institute, Tamil Nadu, India; ⁵Department of Biology, Faculty of Science, Srinakharinwirot University, Bangkok, Thailand

Abstract. This study was aimed to find out the host-parasite relationship between *Paragonimus heterotremus* isolated as metacercariae from mountain crabs, *Indochinamon manipurensis*, in Manipur, India and laboratory animals such as puppies, albino rats, Swiss mice, guinea pigs, and rabbits, as experimental animals. The animals were fed with the metacercariae. Infected animals were sacrificed 35 to 430 days after feeding to recover worms, which were used to determine the developmental stages. Adult worms ($n = 14$) were recovered from 3 puppies ≥ 70 days after feeding and immature worms ($n = 25$) were recovered from 2 other puppies 35 or 43 days after infection. The infection rate in puppies was 100%. Juvenile worms were recovered from 3 of 13 rats: 1 of 11 rats whose viscera and cavities were examined and both of two rats whose muscles were examined. Rats were not a suitable animal model for pulmonary infection with *P. heterotremus*. Mice, guinea pigs, and rabbits were also found to be insusceptible to pulmonary infection with *P. heterotremus*.

Keywords: *Paragonimus heterotremus*, puppy, metacercariae, host-parasite relationship, infectivity, India

Correspondence: Hiromu Sugiyama, Department of Parasitology, National Institute of Infectious Diseases, Toyama 1-23-1, Shinjuku-ku, Tokyo 162-8640, Japan.

Tel: +81 3 5285 1111; Fax: +81 3 5285 1173

E-mail: hsugi@nih.go.jp