

Product Information Sheet for NR-49449

Stage L3 *Dirofilaria immitis*, Strain MP3, Infective Larvae (Frozen)

Catalog No. NR-49449

This reagent is the tangible property of the U.S. Government.

For research use only. Not for human use.

Contributor:

Andrew R. Moorhead, D.V.M., M.S., Ph.D., Director and Principal Investigator, Filariasis Research Reagent Resource Center, Department of Infectious Diseases University of Georgia College of Veterinary Medicine, Athens, Georgia, USA

Manufacturer:

Filariasis Research Reagent Resource Center supported by Contract HHSN27220100030I, NIH-NIAID Animal Models of Infectious Disease Program

Product Description:

Classification: Onchocercidae, *Dirofilaria*

Species: *Dirofilaria immitis*

Strain: MP3

Original Source: *Dirofilaria immitis* (*D. immitis*), strain MP3 was originally obtained from TRS Laboratories in Athens, Georgia, USA.¹

D. immitis is a filarial nematode that causes cardiopulmonary dirofilariasis in wild and domesticated canines and felines, and is the causative parasite of human pulmonary dirofilariasis.² *D. immitis* is commonly known as heartworm disease.

D. immitis is a mosquito-borne filarial worm. In the case of canines, for which *D. immitis* is best adapted, mosquitoes deposit infective third stage larvae (L3) on the skin which penetrate the host. Maturation from stage L3 to L4 occurs between 3 and 12 days post-infection followed by a subsequent molt producing juvenile adult worms between 50 and 70 days post-infection. The first juvenile adult worms arrive in the pulmonary artery and right ventricle of the heart between 70 and 85 days post-infection and reach sexual maturity approximately 120 days post-infection. Adult females are able to produce and release microfilariae between 6 and 9 months post-infection, which can be taken up by mosquitoes during a blood meal.³

Humans and felines are much less suitable hosts. In humans, *D. immitis* may be able to reach a branch of the human pulmonary artery, but would trigger an immune response that destroys the immature nematodes; this infrequently results in pulmonary nodules.³ In felines, cardiopulmonary dirofilariasis follows a similar life cycle as in canines, but is often asymptomatic, and there is a marked reduction in nematode

fertility and viability.³

Material Provided:

NR-49449 consists of up to 1000 stage L3 *D. immitis* infective larvae. If more material is required for your intended use, please contact BEI Customer Services at contact@beiresources.org, to request the additional material.

Packaging/Storage:

NR-49449 was packaged in 1.5 mL centrifuge tubes. The product is provided on dry ice and should be stored at -20°C or colder immediately upon arrival.

Citation:

Acknowledgment for publications should read "The following reagent was provided by the NIH/NIAID Filariasis Research Reagent Resource Center for distribution by BEI Resources, NIAID, NIH: Stage L3 *Dirofilaria immitis*, Strain MP3, Infective Larvae (Frozen), NR-49449."

Biosafety Level: 2

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. Biosafety in Microbiological and Biomedical Laboratories. 5th ed. Washington, DC: U.S. Government Printing Office, 2009; see www.cdc.gov/biosafety/publications/bmbl5/index.htm.

Disclaimers:

You are authorized to use this product for research use only. It is not intended for human use.

Use of this product is subject to the terms and conditions of the BEI Resources Material Transfer Agreement (MTA). The MTA is available on our Web site at www.beiresources.org.

While BEI Resources uses reasonable efforts to include accurate and up-to-date information on this product sheet, neither ATCC® nor the U.S. Government makes any warranties or representations as to its accuracy. Citations from scientific literature and patents are provided for informational purposes only. Neither ATCC® nor the U.S. Government warrants that such information has been confirmed to be accurate.

This product is sent with the condition that you are responsible for its safe storage, handling, use and disposal. ATCC® and the U.S. Government are not liable for any damages or injuries arising from receipt and/or use of this product. While reasonable effort is made to ensure authenticity and reliability of materials on deposit, the U.S. Government, ATCC®, their suppliers and contributors to BEI Resources are not liable for damages arising from the misidentification or misrepresentation of products.

Use Restrictions:

This material is distributed for internal research, non-commercial purposes only. This material, its product or its derivatives may not be distributed to third parties. Except as performed under a U.S. Government contract, individuals contemplating commercial use of the material, its products or its derivatives must contact the contributor to determine if a license is required. U.S. Government contractors may need a license before first commercial sale.

References:

1. Michalski, M. L., et al. "The NIH-NIAID Filariasis Research Reagent Resource Center." PLoS Negl. Trop. Dis. 5 (2011): e1261. PubMed: 22140585.
2. Morchon R., et al. "Heartworm Disease (*Dirofilaria immitis*) and Their Vectors in Europe – New Distribution Trends." Front. Physiol. 3 (2012): e00196. PubMed: 22701433.
3. Simonsen, P. E. and M. E. Mwakitalu. "Urban Lymphatic Filariasis." Parasitol. Res. 112 (2013): 35-44. PubMed: 23239094.

ATCC® is a trademark of the American Type Culture Collection.

