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Source: Journal of Wildlife Diseases, 25(4) : 629

Published By: Wildlife Disease Association

URL: <https://doi.org/10.7589/0090-3558-25.4.629>

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## ***Dirofilaria immitis* in a River Otter (*Lutra canadensis*) from Louisiana**

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**ABSTRACT:** A single adult male river otter (*Lutra canadensis*) from Louisiana was found naturally infected with *Dirofilaria immitis*. One adult male nematode was found in the heart; lesions attributable to the presence of the parasite were not found. This is the first report of *D. immitis* in the river otter in North America.

**Key words:** River otter, *Lutra canadensis*, *Dirofilaria immitis*, heartworm, natural infection, case report.

Three adult male river otters (*Lutra canadensis*) were obtained in October 1988 from a trapper in Theriot, Louisiana (USA; 29°29'N, 90°47'W) for experimental safety evaluation of a genetically engineered raccoon rabies vaccine (Rupprecht et al., 1986) in non-target wild animals. At necropsy in December 1988, one of the otters was found to have one adult male filarioid nematode in its right ventricle. The morphologic features of the worm corresponded to previous descriptions of *Dirofilaria immitis* (see Abraham, 1988). The spicules were unequal and dissimilar; the left one measured 0.27 mm and the right 0.19 mm in length. This specimen has been deposited in the U.S. National Parasite Collection (Beltsville, Maryland 20705, USA; accession number 80706). Lesions were not associated with the presence of this parasite.

*Dirofilaria immitis* has been reported in a wide variety of wild and domestic animals (Abraham, 1988). This is the first report of *D. immitis* in a river otter in North America. *Dirofilaria immitis* has been reported from the Giant Brazilian otter (*Pteronura brasiliensis*; synonym = *Lutra brasiliensis*) in Venezuela (Abraham, 1988). *Dirofilaria lutrae* has been described from the subcutaneous tissues of *L. canadensis* in Louisiana and Florida

(Orihel, 1965). Orihel (1965) mentioned that on rare occasions *D. lutrae* may be found in the heart; however, *D. lutrae* is readily differentiated from *D. immitis* based on measurements of the spicules.

Female specimens of *D. immitis* were not found in the river otter examined herein and thus it is impossible to know if patent infections might develop in this host species. Based on previous reports of *D. immitis* in various aberrant hosts (Snyder et al., 1989), it is apparent that the domestic dog and a few species of wild canids are the only definitive hosts that are of significance in the epizootiology of *D. immitis*.

This research was supported by grants from the Pennsylvania Department of Agriculture and the Rockefeller Foundation.

### **LITERATURE CITED**

- ABRAHAM, D. 1988. Biology of *Dirofilaria immitis*. In *Dirofilariasis*, P. F. L. Boreham and R. B. Atwell (eds.). CRC Press, Inc., Boca Raton, Florida, pp. 29-46.
- ORIHIEL, T. C. 1965. *Dirofilaria lutrae* sp. n. (Nematoda: Filarioidea) from otters in the southeast United States. *The Journal of Parasitology* 51: 409-413.
- RUPPRECHT, C. E., T. J. WIKTOR, A. N. HAMIR, B. DIETZSCHOLD, W. H. WUNNER, L. T. GLICKMAN, AND H. KOPROWSKI. 1986. Oral immunization and protection of raccoons (*Procyon lotor*) with a vaccinia rabies glycoprotein recombinant virus vaccine. *Proceedings of the National Academy of Sciences USA* 83: 7947-7950.
- SNYDER, D. E., A. N. HAMIR, C. A. HANLON, AND C. E. RUPPRECHT. 1989. *Dirofilaria immitis* in a raccoon (*Procyon lotor*). *Journal of Wildlife Diseases* 25: 130-131.

Received for publication 16 March 1989.