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Title	TRICHINELLA SPIRALIS AND T. PSEUDOSPIRALIS : VIABILITY OF LARVAE AS DETERMINED BY THE MTT DYE METHOD AFTER FREEZING OR IMMUNOLOGICAL EXPULSION
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Citation	Japanese Journal of Veterinary Research, 35(2), 135-135
Issue Date	1987-04-30
Doc URL	https://hdl.handle.net/2115/3052
Type	departmental bulletin paper
File Information	KJ00002374494.pdf



TRICHINELLA SPIRALIS AND *T. PSEUDOSPIRALIS*:
VIABILITY OF LARVAE AS DETERMINED
BY THE MTT DYE METHOD AFTER FREEZING
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Viability of *Trichinella spiralis* and *T. pseudospiralis* infective larvae after freezing or rapid expulsion in rats was determined by MTT reaction. MTT, a yellow tetrazolium salt, is reduced by mitochondrial dehydrogenases of living cells to a purple formazan product. In this novel attempt, the MTT dye method was applied to the field of parasitology.

The skeletal muscles of mice infected with *T. spiralis*-Sapporo strain isolated from a polar bear, *T. spiralis*-Polish strain isolated from a pig, or *T. pseudospiralis* were stored at -20°C for 3 to 24 hours. The viability of infective larvae was then determined by means of the MTT dye method, by observation of their motility or morphological appearances, and by their infectivity to ICR mice. From the results of these three tests, *T. spiralis*-Sapporo strain was found to be the most cold-resistant among the three *Trichinella*, and *T. pseudospiralis* the least. With the exception of *T. pseudospiralis*, which had been frozen for 24 hours, all the adult females of the three *Trichinella* recovered from the small intestine of ICR mice 8 days postinfection had larvae in their uterus. Thus, larvae which could withstand freezing were infective and could become sexually mature.

Of the worms recovered from rats two hours after inoculation in the primary infection, 9.6% for *T. spiralis* (Polish strain) and 4.4% for *T. pseudospiralis* were from the distal third portion of the small intestine and the large intestine combined. But in the secondary infection, 34.9% for *T. spiralis* and 53.6% for *T. pseudospiralis* were found in the same parts of the intestine. Expulsion of both *Trichinella* worms in rats began within 2 hours after reinfection. Results of reinfection with both *T. spiralis* and *T. pseudospiralis*, observed by the MTT dye method, showed that worms recovered from the lumen of the small intestine or large intestine 12 hours postinoculation were still viable.

Therefore, the MTT dye method can be used to determine the viability of *Trichinella* infective larvae.