



BIOMEDICAL RESEARCH INSTITUTE

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## Quantitating *Schistosoma* spp. cercariae

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### Introduction

Numerous procedures in a schistosomiasis laboratory necessitate counting cercariae. One such procedure is the exposure of small mammals, such as mice, to cercariae for infection, where it is important to obtain an accurate estimate of the number of cercariae to which each mouse is exposed. The following procedure is written for *S. mansoni* cercariae, but it works well for counting *S. haematobium* cercariae as well.

### Equipment

Dissecting microscope

### Materials and reagents

Suspension of *S. mansoni* cercariae

Iodine solution (4 g potassium iodide and 2 g iodine dissolved in 100 ml distilled water)

Adjustable Eppendorf pipette (200  $\mu$ l +)

Artificial pond water

60 mm diameter, scored plastic petri dishes

### Procedure

1. Withdraw 200  $\mu$ l of a cercarial suspension. *It is important to mix the suspension gently to evenly distribute cercariae before withdrawing aliquots.*
2. Place the aliquot in a scored, 60 mm diameter petri dish.
3. Add enough artificial pond water to cover the bottom of the petri dish.
4. Add 1-2 drops of the iodine solution, mix, and let stand for about 1 minute. This allows the stained cercariae to settle to the bottom of the dish.
5. Under a dissecting microscope count the heavily stained cercariae. *Note: The cercariae will be killed by the iodine solution and are therefore no longer motile.*

### Comments

Although variations of the above procedure may be used, we emphasize the importance of counting several aliquots of the cercarial suspension and taking an average of those counts. Because consistently obtaining an even suspension of cercariae is difficult, an accurate estimate of the number of cercariae per ml can be made only by taking multiple counts. Note: If the original cercarial suspension is approximately 2000/ml and above, the cercariae tend to clump together, making an accurate count even more difficult to achieve. The suspension should then be further diluted with pond water to prevent clumping and improve counting accuracy.



### References

1. Tucker, M. S., Karunaratne, L. B., Lewis, F. A., Frietas, T. C., and Liang, Y-S. 2013. Schistosomiasis, in *Current Protocols in Immunology* 19.1.1-19.1.57, John Wiley and Sons, Inc., (R. Coico, Ed). Published online November 2013 in Wiley Online Library ([wileyonlinelibrary.com](http://wileyonlinelibrary.com)). doi: 10.1002/0471142735.im1901s103.

Stained cercaria. A single *S. mansoni* cercaria stained with iodine. Readily visible is the attachment site of the tail to the body.