



BIOMEDICAL RESEARCH INSTITUTE

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## Determination of patency via shedding in *Biomphalaria glabrata* exposed to *S. mansoni*

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### Introduction

For *B. glabrata* exposed to *S. mansoni* miracidia, wait 4 weeks post-infection before testing for the presence of cercariae. Testing snails individually is key to establishing a group of “positive” snails that will readily shed 100s of cercariae for your experiments.

### Caution

*Schistosoma* spp. cercariae are infectious to humans and can penetrate exposed skin. Always use personal protective equipment (lab-coat, gloves, plastic sleeve covers, and face shield when working with cercariae. If exposed, immediately wash the skin with 70% EtOH and monitor for irritation. Report the exposure to your supervisor and/ or medical doctor.

### Materials

Dissecting microscope  
Artificial pond water (water)  
24-well plates  
Miracidia exposed snails  
PPE (lab-coat, gloves, plastic sleeve covers and face shield)

### Procedures

1. Using featherweight forceps, place a single snail into the well of a 24-well plate and cover with pond water.
2. Place the lid on the plate and put the plate in a light box for 1 hour. If you do not have a light box, use a lab high intensity bench light.
3. After 1 hour, check each well for cercariae using a microscope. Use a marker to mark the positive wells on a separate sheet or on the lid of the 24-well plate. **Use extreme caution, live cercariae may be present.**
4. Put “positive” snails into a separate tub, add lettuce and place in a dark room. If positive snails are kept in light, they will continue shedding cercariae and die off quickly.
5. Return “negative” snails (no cercariae) to their tubs and test weekly until week 6 or 7 post-exposure.
6. Snails that do not become positive after seven weeks can be sprayed with alcohol and disposed of in a biohazard box.

## Notes

When prepatent snails are maintained at a room temperature of 30°C, expect 50% or more of an exposed *B. glabrata* population to be shedding cercariae between 4 to 6 weeks post-exposure. Snails kept at a cooler temperature will take longer to reach patency, as the cercariae will mature more slowly.

## References

1. Lewis, F.A., Stirewalt, M.A., Souza, C.P., and Gazzinelli, G. 1986. Large-scale laboratory maintenance of *Schistosoma mansoni*, with observations on three schistosome/snail host combinations. Journal of Parasitology 72: 813-829.
2. 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). doi: 10.1002/0471142735.im1901s103.