Baermann Technique for *Strongyloides*

PRINCIPLE

The Baermann technique works on the principal that larvae will migrate out of a fresh stool sample and will subsequently sink to the bottom of their liquid environment. Larvae will therefore concentrate in the lowest point and the contents of a large stool sample can be examined.

SPECIMEN

- fresh stool sample that has not been refrigerated
- charcoal culture.

SAFETY

- Assume that the sample contains filariaform larvae and wear gloves and take measures to prevent the larvae from migrating out of the dish.
- Warn co-workers about the nature of your work.

PROCEDURE

This is considered to be a non-routine procedure therefore it should only be performed by experienced personnel.

1. Firmly attach a 6 inch glass funnel to a retort stand using a ring adaptor. Attach rubber tubing with a secure clamp to the stem of the funnel. Place a collection container under the end of the tubing.
2. On top of the funnel place a wire mesh with two layers of gauze. Make sure that the gauze is trimmed to the size of the funnel, so that none of the potentially infective solution will drip over the side of the funnel and contaminate the surrounding bench area. Fill the funnel with water.
3. Place the charcoal culture on top of the gauze, making sure that it is in contact with the water.
4. Allow the apparatus to stand for 2 hours or longer before draining off a portion of the fluid directly above the clamp. Centrifuge the fluid and examine for the presence of motile larvae under a 10X or 40X objective. *As infective filariform larvae could be*

present at any time during this procedure, caution must be used when any handling of the culture occurs.

QUALITY CONTROL

- Be aware of temperature variations.
- As it is not possible to have a positive control specimen to use with this procedure, the technologist should review the appearance and size of the organisms present to ensure that they match reference material (i.e. *Bench Aids for the Diagnosis of Intestinal Parasites* (WHO)).Ensure that the microscope has been calibrated in the last year and that the results of the calibration are displayed on the microscope base.
- Free living larvae could be present in the culture. To rule out their presence add 0.3ml of
- conc. HCL per 10ml of water containing larvae. Free living nematode larvae will be killed by the acid, while parasitic species can live for 24hours.
- As larvae of certain species are susceptible to cold, fresh stool samples that have been refrigerated are not acceptable for culture techniques
- Be aware of any leaks or drips from Baermann app.

REPORT

- If no larvae are found report "No larvae found after X days of incubation".
- If larvae are found report for example "Strongyloides stercoralis filariform larvae found after 7 days of incubation".

AUTHOR

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REFERENCES

Kobayashi, J., et al, Studies on prevalence of Strongyloides infection in Holambra and Maceio, Brazil, by the agar plate faecal culture method *Rev Inst Med Trop Sao Paulo* 38**:**279-84 1996

Gillespie, S.H. and Hawkey, P.M. Medical Parasitiology: A Practical Approach. IRL Press New York 1994 pp177-190