Dec 08, 2025

Egg recovery technique

DOI
https://dx.doi.org/10.17504/protocols.io.dm6gpm4ejgzp/v1

Mehdi Borhani[1]

[1]State Key Laboratory of Pathogenesis, Prevention and Treatment of High Incidence Diseases in Central Asia, Xinjiang Medical University, Urumqi, China.

MB

Mehdi Borhani

DOI: https://dx.doi.org/10.17504/protocols.io.dm6gpm4ejgzp/v1

Protocol Citation: Mehdi Borhani 2025. Egg recovery technique. **protocols.io** https://dx.doi.org/10.17504/protocols.io.dm6gpm4ejgzp/v1

Protocol status: Working
We use this protocol and it's working

Created: December 08, 2025

Last Modified: December 08, 2025

Protocol Integer ID: 234437

Keywords: egg recovery technique abstract of egg recovery technique, egg recovery technique abstract, eggs from wool, egg recovery technique, recovering egg, soil sample, soil samples this study, sediments from both wash, resulting sediment, hair sample, sediment, overnight sedimentation, wool, modified flotation method, flotation method, sifted soil, egg, zncl$_2$ flotation, using zncl$_2$ flotation, floating hair, taeniid egg, distilled water wash

Disclaimer

This document details modified egg recovery techniques for wool/hair and soil samples (adapted from Mathis et al. [28] and Horiuchi S et al. [29]), provided solely for research and academic reference.
Limited Applicability: Techniques are scenario-specific; adjust reagents/parameters as needed and validate prior to use.
Operational Responsibility: Qualified personnel must follow safety standards. Authors/relevant parties are not liable for damages from improper use/modification.
Reference Citation: Cite original literature [28, 29] and this document; plagiarism/improper use is prohibited.
No Warranty of Results: No guarantee of success/consistency; users assume result-related risks.
Compliance: Ensure experiments adhere to national/local laws, ethics, and sample collection/processing norms.
Use of these techniques constitutes acceptance of this disclaimer. Authors reserve the right to update terms without notice.

Abstract

Abstract of Egg Recovery Technique from Wool, Hair and Soil Samples
This study describes modified techniques for recovering eggs from wool/hair samples and soil samples, respectively. For wool and hair samples, the protocol was adapted from Mathis et al. Each sample was first washed in phosphate-buffered saline (PBS) with Tween 20 in a nylon bag, followed by a distilled water wash. Floating hairs were discarded, while sediments from both washes were collected via overnight sedimentation and centrifuged at 3000 × g for 5 minutes. The resulting sediments were processed using $ZnCl_2$ flotation, sequentially sieved through 50 µm and 20 µm filters, and examined under an inverted microscope; the final pellet was stored at −20 °C for subsequent analysis. For soil samples, a modified flotation method was employed: samples were air-dried for 24 hours, sieved through a 150 µm mesh, and 5 g of sifted soil was mixed with distilled water. The suspension was centrifuged at 1800 rpm for 10 minutes, the supernatant discarded, and the sediment resuspended in a 1.2 specific gravity sucrose solution followed by re-centrifugation. A 1.3 specific gravity sucrose solution was then layered on top, and a cover slip was used to collect the uppermost suspension. Slides were examined under a compound light microscope at 100× and 400× magnifications to identify eggs, with taeniid eggs collected and stored at -80°C for further studies.

Wool and hair samples

1 The samples were processed using a modified version of the protocol described by Mathis et al [28]. Initially, each sample was washed in 1 liter of phosphate-buffered saline (PBS) containing 0.2 mL of Tween 20 under vigorous shaking inside a clean nylon bag. After 10 minutes, the floating hairs were transferred to a separate nylon bag, followed by a second wash with 1 liter of distilled water. The hair materials were then discarded and the sediments were collected after overnight sedimentation. Both the first and second sediments were centrifuged at 3000 × g for 5 minutes, after which the supernatant was carefully removed. The sediments were then processed using a flotation technique with $ZnCl_2$, followed by sequential sieving through 50 µm and 20 µm filters. The sieves were thoroughly rinsed with water, and the remaining materials were examined under an inverted microscope. Finally, the pellet was stored at −20 °C until further analysis [28].

Soil samples

2 The soil samples underwent a modified flotation technique for processing [29]. Briefly, the soil samples were air-dried for a period of 24 hours and then sieved through a mesh size of 150 µm. Five grams of the sifted soil were placed in a 10-ml test tube and mixed with 8 ml of distilled water using a vortex mixer. The resulting suspension was then centrifuged at 1800 rpm for 10 minutes. After centrifugation, the supernatant was discarded, and 8 ml of sucrose solution with a specific gravity of 1.2 was added to the sediment in the tube. The contents were thoroughly mixed using the vortex mixer. The tube was then centrifuged again for 10 minutes at 1800 rpm. Following centrifugation, sucrose solution with a specific gravity of 1.3 was slowly added to the top of the tube, using a 10-ml syringe, until an upper meniscus was formed. A cover slip was carefully placed on the meniscus to collect the uppermost portion of the sucrose suspension. The resulting slides were examined under a compound light microscope, at magnifications of 100× and 400× to identify the presence of eggs. Finally, taeniid eggs were collected and stored at −80°C for further analysis.

Protocol references

28. Mathis A, Deplazes P, Eckert J. An improved test system for PCR-based specific detection of Echinococcus multilocularis eggs. J Helminthol. 1996;70: 219–222. doi:10.1017/s0022149×00015443
29. Horiuchi S, Uga S. Modified flotation method, an effective technique for recovering helminth eggs in soil. Parasitol Int. 2016;65: 576–579. doi:10.1016/j.parint.2016.04.010