

Oct 07, 2024

Version 1

Chemical fixation of *Solarion arianae* for transmission electron microscopy V.1

DOI

<https://dx.doi.org/10.17504/protocols.io.kxygxyd5zl8j/v1>

Marek Valt¹, Pavla Hrubá¹

¹Charles University, Faculty of Science, Department of Zoology, Prague, Czechia

SUM-K



Marek Valt

Charles University, Faculty of Science, Department of Zoolog...

Create & collaborate more with a free account

Edit and publish protocols, collaborate in communities, share insights through comments, and track progress with run records.

Create free account

OPEN  ACCESS



DOI: <https://dx.doi.org/10.17504/protocols.io.kxygxyd5zl8j/v1>

Protocol Citation: Marek Valt, Pavla Hrubá 2024. Chemical fixation of *Solarion arianae* for transmission electron microscopy . protocols.io <https://dx.doi.org/10.17504/protocols.io.kxygxyd5zl8j/v1>

License: This is an open access protocol distributed under the terms of the **Creative Commons Attribution License**, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited



Protocol status: Working

We use this protocol and it's working

Created: September 27, 2024

Last Modified: October 07, 2024

Protocol Integer ID: 108556

Keywords: solarion arianae for transmission electron microscopy, standard chemical fixation for transmission electron microscopy, solarion arianae, standard chemical fixation, transmission electron microscopy, microscopy, fixation, fixation of the culture

Abstract

This is an optimized version of the protocol for standard chemical fixation for transmission electron microscopy that was used for the fixation of the culture of *Solarion arianae*.



Cell harvest

- 1 Centrifuge a well-grown culture at 1250 g at 4 °C.

5m



- 1.1 Discard supernatant and collect pellet.

Chemical cell fixation

2d 6h 3m

- 2 Immerse pellet with 2,5% glutaraldehyde fixative in 0,1M cacodylate buffer solution for 1h. Work on ice.

1h



- 3 Wash with 0,1M cacodylate buffer, 3 times.

- 4 Post-fix with 2% OsO₄ in 0,1 M cacodylate buffer for 1h, on ice

1h



- 5 Wash fixed samples in distilled water, 3 times.

- 6 Dehydrate samples in ethanol series 30%, 50%, 70%, 80%, 90%, 95%, (100% 3 times)

- 7 Impregnate the dehydrated sample with acetone 1:1 ethanol solution.

- 8 Impregnate with 100% acetone.

- 9 Impregnate acetone 1:1 resin (EMbed 812) mixture.



- 10 Transfer the sample to (EMbed 812) resin. Repeat 3 times every 4h. (can be left longer or overnight)

4h





- 11 Polymerize samples embedded in resin at 70 °C for 48h.

2d

Section preparation

- 12 Cut sections.
For *Solarion*, 80nm thick sections were cut with a diamond knife on an Ultracut E ultramicrotome (Reichert).
- 13 post-contrast with uranyl acetate and lead citrate.