



Sep 26, 2022

© Protocol collection: Dissociation and FACS isolation of embryonic and postembryonic C. elegans intestine cells for RNA-seq analysis

Robert TP Williams¹, Erin Osborne Nishimura¹

¹Colorado State University, Fort Collins



dx.doi.org/10.17504/protocols.io.5jyl895jdv2w/v1

Osborne Nishimura Lab



ABSTRACT

This is a collection of protocols for the isolation of *C. elegans* intestine cells through FACS from embryo, L1, and L3 stage . The protocols are focused on collecting material for RNA-seq analysis, but could be utilized for other biochemical assays. Troubleshooting suggestions are listed at key steps of the protocols.

To perform this experiment, perform the protocols in the following order:

- 1. Synchronized C. elegans culture on NGM plates for FACS isolation of intestine cells
- 2. [Embryo, L1, or L3] stage *C. elegans* dissociation for FACS isolation and RNA-seq analysis of intestine-specific cells
- 3. FACS isolation of intestine-specific C. elegans cells

A single experiment cycle takes approximately two weeks to complete.

DOI

dx.doi.org/10.17504/protocols.io.5jyl895jdv2w/v1

COLLECTION CITATION

Robert TP Williams, Erin Osborne Nishimura 2022. Protocol collection: Dissociation and FACS isolation of embryonic and post-embryonic C. elegans intestine cells for RNA-seq analysis. **protocols.io**

https://protocols.io/view/protocol-collection-dissociation-and-facs-isolatio-b328qqhw





FUNDERS ACKNOWLEDGEMENT

National Institutes of Health

Grant ID: R35GM124877

Bridge to Doctorate at Colorado State University

Grant ID: 1612513

National Science Foundation

Grant ID: 2143849

Webb-Waring Biomedical Research Award

Grant ID: E.O.N.

KEYWORDS

C. elegans, intestine, FACS, single cell suspension, cell dissociation

LICENSE

This is an open access collection 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

CREATED

Jan 19, 2022

LAST MODIFIED

Sep 26, 2022

COLLECTION INTEGER ID

57152

ABSTRACT

This is a collection of protocols for the isolation of *C. elegans* intestine cells through FACS from embryo, L1, and L3 stage . The protocols are focused on collecting material for RNA-seq analysis, but could be utilized for other biochemical assays. Troubleshooting suggestions are listed at key steps of the protocols.

To perform this experiment, perform the protocols in the following order:

- 1. Synchronized *C. elegans* culture on NGM plates for FACS isolation of intestine cells
- 2. [Embryo, L1, or L3] stage *C. elegans* dissociation for FACS isolation and RNA-seq analysis of intestine-specific cells
- 3. FACS isolation of intestine-specific *C. elegans* cells

A single experiment cycle takes approximately two weeks to complete.



2

FILES

