

Materials List for:

The *C. elegans* Intestine As a Model for Intercellular Lumen Morphogenesis and *In Vivo* Polarized Membrane Biogenesis at the Single-cell Level: Labeling by Antibody Staining, RNAi Loss-of-function Analysis and Imaging

Nan Zhang^{1,2}, Liakot A Khan¹, Edward Membreno¹, Gholamali Jafari¹, Siyang Yan¹, Hongjie Zhang^{1,3}, Verena Gobel¹

¹Mucosal Immunology and Biology Research Center, Developmental Biology and Genetics Core, Massachusetts General Hospital, Harvard Medical School

²College of Life Sciences, Jilin University

³Faculty of Health Sciences, University of Macau

Correspondence to: Hongjie Zhang at HJZhang@umac.mo, Verena Gobel at vgobel@mgh.harvard.edu

URL: <https://www.jove.com/video/56100>

DOI: [doi:10.3791/56100](https://doi.org/10.3791/56100)

Materials

Name	Company	Catalog Number	Comments
Antibody staining			
poly-L-lysine	Sigma	P5899	
Methanol	Fisher Scientific	A452-4	
Acetone	Fisher Scientific	A949SK-4	
Tween	Fisher Scientific	50-213-612	
Permunt	Fisher Scientific	SP15-100	
Powdered milk	Sigma	MT409-1BTL	
Primary antibodies			
MH27 (mouse)			Concentration: 1:20 Resources: Developmental Studies Hybridoma Bank.
MH33 (mouse)			Concentration: 1:10 Resources: Developmental Studies Hybridoma Bank.
anti-ICB4 (rabbit)			Concentration: 1:5 Resources: A gift from Mario de Bono (Medical Research Council, England)
anti-PAR-3 (rabbit)			Concentration: 1:50 Resources: A gift from Kenneth J. Kemphues (Cornell University)
Secondary antibodies			
Alexa Floor 568 (anti-rabbit)	ABCam	AB175471	Concentration: 1:200
Cy5 (anti-mouse)	Life technologies	A10524	Concentration: 1:200
TRITC (anti-rabbit)	Invitrogen	T2769	Concentration: 1:200
FITC (anti-mouse)	Sigma	F9006	Concentration: 1:100
Labeled chemicals			
Texas Red-Phalloidin			Concentration: 1:100 Resources: Molecular Probes-T7471
Materials			
Vacuum Grease Silicone	Beckman	335148	
Microscope slides	Fisher Scientific	4448	
Microscope coverslips (22x22-1)	Fisher Scientific	12-542-B	
<i>C. elegans</i> related			see reference ²⁹ for standard <i>C. elegans</i> culture and maintenance procedures.

LB Medium and plates			see reference ²⁹ for protocols.
Tryptone	Acros Organics	611845000	
Yeast Extract	BD Biosciences	212750	
NaCl	Sigma	S7653	
Bacto Agar	BD Biosciences	214040	
Ampicillin	Sigma	A0116	
Tetracycline	Fisher Scientific	BP912	
M9 Medium			see reference ²⁹ for protocols.
NaCl	Sigma	S7653	
KH ₂ PO ₄	Sigma	P0662	
Na ₂ HPO ₄	Sigma	S7907	
MgSO ₄	Sigma	M2773	
NGM plates			see reference ²⁹ for protocols.
NaCl	Sigma	S7653	
Peptone	BD Biosciences	211677	
Tryptone	Acros Organics	611845000	
Bacto Agar	BD Biosciences	214040	
MgSO ₄	Sigma	M2773	
CaCl ₂	Sigma	C3881	
Cholesterol	Sigma	C8667	
K ₂ HPO ₄	Sigma	P3786	
KH ₂ PO ₄	Sigma	P0662	
RNAi plates			see reference ³⁰ for protocols.
NaCl	Sigma	S7653	
Peptone	BD Biosciences	211677	
Tryptone	Acros Organics	611845000	
Bacto Agar	BD Biosciences	214040	
MgSO ₄	Sigma	M2773	
CaCl ₂	Sigma	C3881	
Cholesterol	Sigma	C8667	
K ₂ HPO ₄	Sigma	P3786	
KH ₂ PO ₄	Sigma	P0662	
IPTG	US Biological	I8500	
Carbenicillin	Fisher Scientific	BP2648	
NaOH	Fisher Scientific	SS266-1	
Sodium hypochlorite	Fisher Scientific	50371500	
Bacteria			
OP50 bacteria	CGC		
HT115 bacteria	CGC		
Genome-wide RNAi libraries Ahringer genome-wide RNAi feeding library (ref ^{30,49,50})	Source BioScience		
<i>C. elegans</i> ORF-RNAi feeding library (ref ⁵¹)	Source BioScience		
Imaging related			

Sodium azide	Fisher Scientific	BP9221-500	
Equipment			
dissecting microscope	Nikon	SMZ-U	
dissecting microscope equipped with a high-power stereo fluorescence attachment (Kramer Scientific), CCD camera with Q capture software and X-Cite fluorescent lamp (Photonic Solutions)	Olympus	SZX12	
Laser-scanning confocal microscope	Leica Microsystem	TCS SL	
laser-scanning confocal mounted on an ECLIPSE Ti-E inverted microscope	Nikon	C2	