

Materials List for

Quantification of Interbacterial Competition using Single-Cell Fluorescence Imaging

Stephanie Smith¹, Alecia N. Septer¹

¹Department of Earth, Marine, and Environmental Sciences, University of North Carolina

Corresponding Author

Alecia N. Septer

asepter@email.unc.edu

Citation

Smith, S., Septer, A.N. Quantification of Interbacterial Competition using Single-Cell Fluorescence Imaging. *J. Vis. Exp.* (175), e62851, doi:10.3791/62851 (2021).

Date Published

September 2, 2021

DOI

10.3791/62851

URL

jove.com/video/62851

Materials

Name	Company	Catalog Number	Comments
1.5 mL Microcentrifuge tube	Fisher	05-408-129	
10 uL single channel pipette			
1000 uL single channel pipette			
20 uL single channel pipette			
200 uL single channel pipette			
Agarose	Fisher	BP165-25	Low melting agarose
Calculator			
Cellvis 35 mm Dish	Fisher	NC0409658	#1.5 cover glass bottom
Chloramphenicol	Sigma	C0378	stock (20 mg/mL in Ethanol); final concentration in media (2 µg /mL LBS)
DAPI Nucleic Acid Stain	Fisher	EN62248	optional (if not using stable plasmids)
FIJI image analysis software	ImageJ	https://imagej.net/Fiji/Downloads	open-source software
Fisherbrand Cover Glasses: Circles	Fisher	12-545-81P	#1.5 cover glass; 12 mm diameter
Kanamycin Sulfate	Fisher	BP906-5	stock (100 mg/mL in water, filter sterilize); final concentration in media (1 µg/mL LBS)
Lens Cleaning Tissue Paper	Fisher	S24530	
Parafilm	Fisher	13-374-12	
Petri Plates	Fisher	FB0875713	sterile with lid
Razor Blades	Fisher	S65921	
Semi-micro Cuvettes	VWR	97000-586	
Spectrophotometer			
SYBR Green Nucleic Acid Stain	Fisher	S7563	optional (if not using stable plasmids)
Thermo Scientific Gold Seal Plain Microscope Slides	Fisher	12-518-100B	
Thermo Scientific Richard-Allan Scientific Cover Glass	Fisher	22-050-235	#1.5 cover glass, 25 mm ²
Type F Immersion Oil	Fisher	NC0297589	

Upright or inverted fluorescence microscope with camera and imaging software			Images in this article were acquired on a Nikon TI-2 inverted fluorescent microscope outfitted with an ORCA-Fusion Digital CMOS camera using NIS-Elements software.
Vortex			
Water bath			Used to keep agarose warm prior to pipetting
LBS media			
1M Tris Buffer (pH ~7.5)			50 mL 1 M stock buffer (62 mL HCl, 938 mL DI water, 121 g Trizma Base)
Agar Technical	Fisher	DF0812-17-9	15 g (Add only for plates)
DI water			950 mL
Sodium Chloride	Fisher	S640-3	20 g
Tryptone	Fisher	BP97265	10 g
Yeast Extract	Fisher	BP9727-2	5 g
mPBS (marine PBS)			Phosphate buffered saline with marine salts added; used for making agarose pad
10X PBS	Fisher	ICN1960454	
Instant Ocean Sea Salt	Instant Ocean	SS1-160P	Adjust concentration to appropriate salinity; 20 psu used here
Sterile Vacuum Filter Units	Fisher	SCGVU01RE	Used to filter-sterilize mPBS
Vacuum pump			Used to filter-sterilize mPBS