

Materials List for

High-Throughput Live Imaging of Microcolonies to Measure Heterogeneity in Growth and Gene Expression

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jove.com/video/62038

Materials

Name	Company	Catalog Number	Comments
General Materials			
500 mL Bottletop Filter .22 µm PES Sterilizing, Low Protein Binding, w/45mm Neck	Fisher	CLS431154	used to filter the media
BD Falcon* Tissue Culture Plates, microtest u-bottom	Fisher	08-772-54	96-well culture tubes used to freeze cells, pre-grow cells, and dilutions
BD Syringes without Needle, 50 mL	Fisher	13-689-8	Used to filter the Concanavalin A
Costar Sterile Disposable Reagent Reservoirs	Fisher	07-200-127	reagent reservoirs used to pipette solutions with multichannel pipette
Costar Thermowell Aluminum Sealing Tape	Fisher	07-200-684	96-well plate seal for pre-growth and freezing
lint and static free Kimwipes	Fisher	06-666A	lint and static free wipes to keep microscope plate bottom free of debris and scratches
Nalgene Syringe Filters	ThermoFisher Scientific	199-2020	0.2 µm pore size, 25 mm diameter; used to filter concanavalin A solution
Media Components			
Minimal chemically defined media (MD; 2% glucose)			alternative microscopy media used for yeast pre-growth and growth during microscopy
Synthetic Complete Media (SC; 2% glucose)			microscopy media used for yeast pre-growth and growth during microscopy
Yeast extract-peptone-dextrose (YEPD; 2% glucose) medium			cell growth prior to freezing down randomized plates
Microscopy Materials			
Breathe-Easy sealing membrane	Millipore Sigma	Z380059-1PAK	breathable membranes used to seal plate during microscopy experiment. At this stage breathable membranes are recommended because they prevent condensation in the wells and allow for better microscopy images

Brooks 96-well flat clear glass bottom microscope plate	Dot Scientific	MGB096-1-2-LG-L	microscope plate
Concanavalin A from canavalia ensiformis (Jack Bean), lyophilized powder	Millipore Sigma	45-C2010-1G	Make 5x concanavalin A solution and freeze 5ml of 5x concanavalin A in 50 mL conical tubes at -80 °C
Strains Used			
MAH.5, MAH.96, MAH.52, MAH.66, MAH.11, MAH.58, MAH.135, MAH.15, MAH.44, MAH.132			Haploid mutation accumulation strains in a laboratory background, described in Hall and Joseph 2010
EP026.2A-2C			Progeny of the ancestral Hall and Joseph 2010 mutation accumulation strain, transformed with YFR054cΔ::Scw11P::GFP
Equipment			
Misonix Sonicator S-4000 with 96-pin attachment			Sonicator https://www.labx.com/item/misonix-inc-s-4000-sonicator/4771281
Nikon Eclipse Ti-E with Perfect Focus System			Inverted microscope with automated stage and autofocus system