

Materials List for

Use of *In Vivo* Imaging to Screen for Morphogenesis Phenotypes in *Candida albicans* Mutant Strains During Active Infection in a Mammalian Host

Rohan S. Wakade¹, Damian J. Krysan^{1,2}, Melanie Wellington¹

¹Department of Pediatrics, Carver College of Medicine, University of Iowa ²Department of Microbiology and Immunology, Carver College of Medicine, University of Iowa

Corresponding Author

Melanie Wellington

melanie-wellington@uiowa.edu

Citation

Wakade, R.S., Krysan, D.J., Wellington, M. Use of *In Vivo* Imaging to Screen for Morphogenesis Phenotypes in *Candida albicans* Mutant Strains During Active Infection in a Mammalian Host. *J. Vis. Exp.* (188), e64258, doi:10.3791/64258 (2022).

Date Published

October 12, 2022

DOI

10.3791/64258

URL

jove.com/video/64258

Materials

Name	Company	Catalog Number	Comments
#1.5 coverslips	Thermo-Fisher	20811	large enough to cover the universal stage opening
0.1 mL Insulin syringes	EXELint	26018	Can use syringes that are 5/16"–1/2" long and 29–32 G
3.7% formaldehyde in dPBS	Sigma-Aldrich	SHBJ5734	
70% Ethanol/30% water	Decon Laboratories	A05061001A	
Alcohol prep pads	Covidien	5110	Alternative: gauze pads soaked in 70% isopropyl alcohol
<i>C. albicans</i> reference strain and experimental strains	SN250	FGSC Online Catalog	The specific <i>C. albicans</i> strain varies with experiment and the investigators goals. We have used strains derived from SC5314 as well as other clinical isolates.
Chlorophyll free mouse chow	Envigo	2920x	
Computer	Dell	Optiplex 7050	Computer that can run imaging software for acquisition and for analysis of images. A variety of imaging software is available and varies with the specific microscope and user system.
Cotton tip applicator	Pro Advantage	76200	
DBA2/N (6-12 week old mice)			BALB/c and C57/BL6 mice can also be used. The latter allow for the use of widely available knockout mouse models as well as mouse models in which individual cell types, such as phagocytes, are identified by their expression of fluorescent proteins.
Double sided tape designed to hold fabric to skin (fashion tape)	local pharmacy or grocery store		Double sided adhesive tape designed for keeping clothing in place over human skin. This is typically available over the counter in pharmacies and variety stores. It is

			<p>important to use this type of tape as it is designed for gentle adherence to skin.</p> <p>Examples: https://www.amazon.com/Womens-Fashion-Clothing-Transparent-Suitable/dp/B08S3TWR3H/ref=sr_1_40?crid=2UWFL8FMFAKGM&keywords=fashion+tape&qid=1649174406&srefix=fashion+tape%2Caps%2C70&sr=8-40 https://www.amazon.com/Fearless-Tape-Sensitive-Clothing-Transparent/dp/B07QY8V5XT/ref=sr_1_26?crid=2UWFL8FMFAKGM&keywords=fashion+tape&qid=1649174320&srefix=fashion+tape%2Caps%2C70&sr=8-26 https://www.amazon.com/Hollywood-Fashion-Secrets-Tape-Floral/dp/B009RX77MK/ref=sr_1_29?crid=2UWFL8FMFAKGM&keywords=fashion+tape&qid=1649174406&srefix=fashion+tape%2Caps%2C70&sr=8-29</p>
Dulbecco's phosphate buffered saline	Gibco / Thermo-Fisher	14190-144	Must be sterile; open a new container for every experiment
Fetal bovine serum	Gibco / Thermo-Fisher	26140-079	
Gauze pad	Pro Advantage	P157112	
Gel eye lubricant	local pharmacy or grocery store		
ImageJ or FIJI analysis software	NIH	ImageJ (FIJI)	
Isoflurane	Akorn	J119005	
Leica DMI8 (SP8 platform) with Leica 11506375 objective lens	Leica	DMI8 (SP8)	<p>The objective lens (Leica 11506375) used here is a 25x water immersion lens to allow us to have a high NA (0.95) while approximating the refractive index of the ear tissue. The microscope (Leica DMI8 (SP8 platform) has 488 nm and 638 nm diode laser lines and is equipped with filter-free spectral detection with computer controlled adjustable bandwidth for detection of emission light.</p> <p>The stage must have enough clearance to allow the objective to reach the bottom coverslip without hitting the stage.</p>
Low-flow anesthesia system or traditional anesthesia vaporizer	Kent Scientific International	SomnoSuite	
Nair hair remover lotion	local pharmacy or grocery store		Over the counter depilatory cream
Nourseothricin	Jena Bioscience	AB-101L	
pENO1-NEON-NATR pENO1-iRFP-NATR plasmids			Fluorescent protein expression transformation constructs generously given to us by Dr. Robert Wheeler (Seman, et al., 2018, Infection and Immunity; Bergeron, et al., 2017, Infection and Immunity)
Pressure sensitive laboratory tape	Tape & Label Graphic Systems Inc	1007910	
RPMI1640 cell culture medium	Gibco / Thermo-Fisher	11875-093	

Thimble, plastic 15 mL conical tube, or Falcon 5 mL round bottom polystyrene tubes	Falcon	352196	To safely hold the animals ear during injectinos
--	--------	--------	--