

Streamlined Intravital Imaging Approach for Long-Term Monitoring of Epithelial Tissue Dynamics on an Inverted Confocal Microscope

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Materials

Name	Company	Catalog Number	Comments
3D Printer	Qudi Tech	i-Fast	3D prints using PLA material
40x 1.25NA silicone objective lens	Nikon		
AxR Laser Scanning Confocal Microscope	Nikon		
Cotton Tipped Swab	VWR	76337-046	Cream/ointment application
Doxycycline hyclate	Sigma-Aldrich	D9891	Induces GFP labeling of fibroblast nuclei in Pdgfra-rtTA; pTRE-H2B-GFP mice
Flathead Screwdriver (2.5 mm)			Affix insert to microscope stage
Flathead Screws x 4 (#6-32)	Nikon		Screw insert into microscope stage
Glass Bottom Culture Dish	chemglass Life Sciences	CLS-1811-002	Modified by removing walls of dish for use as coverslip disk compatible with live insert; 35 mm wide disk contains 20 mm wide glass coverslip; dish walls were removed by machine shop
Heat Plate controller	Physitemp	TCAT-2LV	Animal Temperature Controller - Low Voltage; anal prob attachment for mouse body temperature monitoring
Hex Wrench (1.5 mm)			For M3 setscrew adjustments
Hex Wrench (2.5 mm)			Adjust tension on metal ear clip
Intravital Imaging Insert			
Isoflurane	Med-Vet International	HPA030782-100uL	Mouse anesthesia
Labeling Tape (or Scotch Tape)	VWR	10127-458	Alternative to metal ear clip to immobilize ear to coverslip
Metal fastener			used as ear clip

Mouse: C57BL/6-Pdgfraem1(rtTA)Xsun/J	The Jackson Laboratory	RRID: IMSR_JAX:034459	Fibroblast-specific promoter driving doxycycline-inducible rtTA expression
Mouse: K14-H2BPAmCherry	Courtesy of Dr. Valentina Greco at Yale University		Labels epidermal epithelial cell nuclei with mCherry; referred to in text as "K14-H2B-mCherry"
Mouse: pTRE-H2B-GFP: STOCK Tg(tetO-HIST1H2BJ/GFP)47Efu/J	The Jackson Laboratory	RRID: IMSR_JAX:005104	Labels fibroblast nuclei with GFP when combined with Pdgfra-rtTA and induced with doxycycline
Multipurpose Sealing Wrap	Glad		Enhance mouse warmth
Optixcare	VWR	MSPP-078932779	Eye lubricant
Set screws x 3 (M3; 6 mm)	Thorlabs	SS3M6	Attachment for heatplate module
Silicone Immersion Oil			Applied to 40x silicone objective
Small Animal Heating Plate	Physitemp	HP-4M	Provides heat to animal
Somnoflow Low-Flow Electronic Vaporizer	Kent Scientific	SF-01	Mouse anesthesia
Vacuum Grease	Flinn Scientific	AP1095	Seals coverslip disk to insert
Veet			hair removal
Water circulating heat pad	Stryker Medical	TP700	for mouse revival post-imaging