

Materials List for:

Contrast Imaging in Mouse Embryos Using High-frequency Ultrasound

Janet M. Denbeigh^{1,2}, Brian A. Nixon^{1,2}, Mira C. Puri^{1,2,3}, F. Stuart Foster^{1,2}

¹Department of Medical Biophysics, University of Toronto

²Sunnybrook Research Institute

³Lunenfeld-Tanenbaum Research Institute, Mount Sinai Hospital, Toronto

Correspondence to: Janet M. Denbeigh at Janet.denbeigh@utoronto.ca

URL: <https://www.jove.com/video/52520>

DOI: [doi:10.3791/52520](https://doi.org/10.3791/52520)

Materials

Name	Company	Catalog Number	Comments
Reagents			
Antibodies (biotinylated, eBioscience) — Antibody choice depends on the experiment			
• rat isotype IgG ₂ control	eBioscience	13-4321-85	This antibody/microbubble combination is often required as experimental control
• biotin anti-mouse CD309	eBioscience	13-5821-85	
Biotinylated rat MJ 7/18 antibody to mouse endoglin	In house hybridoma		Outside antibodies may also be appropriate: we have used eBioscience (13-1051-85) in the past
Distilled water			
Embryo media			
• 500 ml Dulbecco's Modified Eagle's Medium with high glucose	Sigma	D5796	
• 50 ml Fetal Bovine Serum	ATCC	30-2020	lot # 7592456
• Hepes	Gibco	15630	5 ml, 1 M
• Penicillin-Streptomycin	Gibco	15140-122	5 ml, 10,000 units Pen., 10,000 µg Strep
Ethanol, 70%			
Ice			
Paraformaldehyde	Sigma	76240	4%
Phosphate Buffered Saline [1x]	Sigma	D8537	1x, w/o calcium chloride & magnesium chloride
Pregnant mouse, CD-1	Charles River Laboratories Inc.		
0.9% sodium chloride (saline)	Hospira	0409-7984-11	
Ultrasound contrast agent, target ready and untargeted	MicroMarker; VisualSonics Inc.		
Ultrasound gel (Aquasonic 100, colourless)	CSP Medical	133-1009	
Equipment			
Cell culture plates (4) : 100 x 20 mm	Fisher Scientific	08-772-22	
Cell culture plates (12) : 60 x 15 mm	Sigma	D8054	
Centrifuge	Sorvall Legend RT centrifuge		

Conical tubes, 50 ml BD Falcon	VWR	21008-938	
Diluent	Beckman Coulter	Isoton II Diluent, 8448011	
Dissection scissors (Wagner)	Fine Science Tools	Wagner 14068-12	
Forceps (2), Dumont SS (0.10 x 0.06 mm)	Fine Science Tools	11200-33	
Forceps, splinter	VWR	25601-134	
Glass beaker, 2 L (Griffin Beaker)	VWR	89000-216	
Glass capillaries, 1 x 90 mm GD-1 with filament	Narishige	GD-1	
Glass needle puller	Narishige	PN-30	
Gloves	Ansell	4002	
Gross anatomy probe	Fine Science Tools	10088-15	
Hot plate	VWR	89090-994	
Ice bucket	Cole Parmer	RK 06274-01	
Imaging Platform	VisualSonics Inc.	Integrated Rail System	
Light source, fiber-optic	Fisher Scientific	12-562-36	Ideally has adjustable arms
Luers (12), polypropylene barbed female ¼-28 UNF thread	Cole Parmer	45500-30	
Micro-ultrasound system, high-frequency	VisualSonics Inc.	Vevo2100	
Needles, 21 gauge (1")	VWR	305165	
Particle size analyzer	Beckman Coulter	Multisizer 3 Coulter Counter	
Perforated spoon (Moria)	Fine Science Tools	MC 17 10373-17	
Pins (6), black anodized minuten 0.15 mm	Fine Science Tools	26002-15	
Pipettors [2-20 µl, 20-200 µl, 100-1,000 µl]	Eppendorf	Research Plus adjustable 3120000038; 3120000054; 3120000062	
Pipettor tips [2-200 µl, 50-1,000 µl]	Eppendorf	epT.I.P.S. 22491334; 022491351	
Scissors			
Sylgard 184 Silicone Elastomer Kit	Dow Corning		
Tubing, Tygon laboratory 1/32" x 3/32"	VWR	63010-007	
Wooden applicator stick (swab, cotton head)	VWR	CA89031-270	
Surgical microscope 5-8X magnification	Fisher Scientific	Steromaster	
Syringes, 1 ml Normject	Fisher	14-817-25	
Syringes (10), 30 ml	VWR	CA64000-041	
Syringe infusion pump	Bio-lynx	NE-1000	
Thermometer, -20-110 °C	VWR	89095-598	
Timer	VWR	33501-418	
Tubes, Eppendorf	VWR	20170-577	
Tube racks (3)	VWR	82024-462	
Ultrasound transducer, 20 MHz	VisualSonics Inc.	MS250	
Vannas-Tubingen, angled up	Fine Science Tools	15005-08	