

Materials List for:

Evaluation of Nanoparticle Uptake in Tumors in Real Time Using Intravital Imaging

Choi-Fong Cho¹, Amber Ablack², Hon-Sing Leong², Andries Zijlstra³, John Lewis^{2,4}

¹Department of Medical Biophysics, University of Western Ontario

²London Regional Cancer Program, London Health Science Centre

³Department of Pathology, Vanderbilt University

⁴Translational Prostate Cancer Research Group, London Health Science Centre

Correspondence to: John Lewis at john.lewis@lhsc.on.ca

URL: <https://www.jove.com/video/2808>

DOI: [doi:10.3791/2808](https://doi.org/10.3791/2808)

Materials

Name	Company	Catalog Number	Comments
Fertilized leghorn eggs	Frey's Hatchery, St. Jacobs	N/A	
Dremel rotary tool	Dremel		Can used any model
Dremel cutoff wheels no. 36	Dremel	409	
Sportsman hatcher	Berry Hill	1550HA	
Sportsman incubator	Berry Hill	1502EA	
Ethanol			70% (vol/vol)
Polystyrene weigh boats	VWR international	12577-01	
Square Petri dishes	Simport	25378-115	
Rubbermaid rubber container with lid	Guillevin	RH3-228-00-BLU	holes drilled into sides
Vertical pipette puller	David Kopf Instruments	model 720	Settings: 16.3 (heater) and 2.3 (solenoid)
Sodium borosilicate glass capillary tubes	Sutter Instrument Co.	BF100-58-10	(OD, 1.0 mm; ID 0.58 mm; 10-cm length)
1X Dulbecco's Modified Eagle Medium (DMEM)	Invitrogen	11995073	
Dulbecco's	Invitrogen	14190250	pH 7.4
Phosphate-Buffered Saline (D-PBS) (1X), liquid			
Trypsin, 0.05% (1X) with EDTA 4Na, liquid	Invitrogen	25300054	
Fetal Bovine Serum	Invitrogen	12483-020	Heat inactivate
Hemocytometer	Hausser Scientific	15170-090	
Centrifuge	Eppendorf	5811 000.010	
Fine-point forceps	VWR international	25607-856	
Tygon R-3603 tubing	VWR international	63009-983	50 ft (1/32-inch inner diameter, 3/32-inch outer diameter, 1/32-inch wall thickness)
Hypodermic needles for injections 18-gauge needles	BD Biosciences	305195	Box of 100
1 ml syringes for injections	BD Biosciences	309602	Box of 100
Fiber-optic microscope illuminator	Amscope	HL250-AY	150W
kimwipes	VWR international	10805-905	

<i>V. unguiculata</i> seeds (California black-eye no. 5)	Burpee	51771A	
Indoor growth lights	SunLite, Gardener's Supply		
Methyl-PEO4-NHS ester	Pierce, Thermo Scientific	PI22341	
mPEG-NHS, PEG succinimidyl ester, MW 2000	NANOCS	PEG1-0002	
Alexa Fluor 647 carboxylic acid (succinimidyl ester)	Invitrogen	A20006	
Oregon Green 488 succinimidyl ester * 6-isomer *	Invitrogen	O-6149	
Dimethyl sulfoxide (DMSO)	Sigma-Aldrich	D8418	
Dibasic monohydrogen phosphate	Sigma-Aldrich	379980	K2HPO4 (for phopshate buffer)
Monobasic dihydrogen phosphate		P5655	KH2PO4 (for phopshate buffer)
Superose 6 size-exclusion column	GE Healthcare	17-0673-01	
ÅKTA Explorer 100 Chromatograph	GE Healthcare	WS-AKTA100	
ÅKTA high flow kit	GE Healthcare	18-1154-85	
Sucrose	Sigma-Aldrich	S0389	
Ultracentrifuge	Beckman Coulter Inc.		
SW 28 Ti rotor	Beckman Coulter Inc.	342204	Swing bucket
50.2 Ti rotor	Beckman Coulter Inc.	337901	Fixed angle
Amicon Ultra-15 Centrifugal Filter Units	EMD Millipore	UFC910008	100 kDa cut off
Gradient former	Bio-Rad		
dextran, fluorescein, 70,000 MW, anionic	Invitrogen	D1823	
Spinning disk confocal fluorescence microscope	Quorum Technologies	N/A	
Epifluorescence wide-field microscope	Quorum; Zeiss Axio Examiner, Zeiss	N/A	
Hamamatsu ImagEM 9100-12 EM-CCD camera	Quorum; Hamamatsu	N/A	
Temperature enclosure unit for microscope	Precision Plastics	N/A	
Vacuum grease	VWR international	59344-055	
Circular glass coverslips no. 1 (18 mm)	VWR international	16004-300	
Volocity software	PerkinElmer, Inc.		
Chick embryo enclosure		custom fabricated	
Delicate scissors	VWR international	25608-203	
Formalin	BioShop Canada	FOR201.500	Use in fumehood
Optimal Cutting	Fisher Scientific	1437365	
Temperature (OCT)			
Plastic moulds	Fisher Scientific	22-038217	
VWR VistaVision HistoBond Adhesive Slides	VWR international	16004-406	
Prolong gold with DAPI	Invitrogen	P36931	
Disposable blades for cryostat	Fisher Scientific	12-634-2	
Cryostat	Leica Microsystems	14047033518	