

Materials List for:

Imaging Subcellular Structures in the Living Zebrafish Embryo

Peter Engerer¹, Gabriela Plucinska^{1,2}, Rachel Thong^{1,3}, Laura Trovò¹, Dominik Paquet^{4,5,6}, Leanne Godinho¹

¹Institute of Neuronal Cell Biology, Technische Universität München

²Cell Biology, Department of Biology, Faculty of Science, Utrecht University

³Faculty of Biology, Ludwig-Maximilians-Universität-München

⁴Adolf-Butenandt-Institute, Biochemistry, Ludwig-Maximilians-Universität-München

⁵German Center for Neurodegenerative Diseases

⁶Laboratory of Brain Development and Repair, The Rockefeller University

Correspondence to: Peter Engerer at Peter.Engerer@tum.de, Leanne Godinho at Leanne.Godinho@tum.de

URL: <https://www.jove.com/video/53456>

DOI: [doi:10.3791/53456](https://doi.org/10.3791/53456)

Materials

Name	Company	Catalog Number	Comments
Agarose (2-hydroxyethylagarose)	Sigma-Aldrich	A4018-10G	Low-gelling temperature Type VII
Block heater	Eppendorf		Thermomixer compact
Ca(NO ₃) ₂ Calcium nitrate hydrate, 99.996%	Aldrich	202967-50g	To prepare 30x Danieau's
CCD camera	Qimaging	Retiga Exi Fast 1394	
Ceramic Coated Dumont #5 Forceps	Dumont - Fine Science Tools	11252-50	#5 Forceps
Confocal laser-scanning microscope	Olympus	FV1000 Fluoview	
Culture dish heater	Warner Instrument Corporation	DH-35	Heating ring
Ethyl 3-aminobenzoate methanesulfate salt	PharmaQ	Tricaine PharmaQ-25g	Tricaine (anesthetic)
Fluorescence dissecting microscope	Leica	M205 FA	
GeneClean kit	MP Biomedicals	111001200	
Glass Bottom Culture Dishes	MatTek Corporation	P35G-0-14-C	35 mm petri dish, 14 mm microwell, No. 0 coverglass
Glass needles	World Precision Instruments Inc.	TW100F-4	For microinjections
HEPES	Sigma	H3375-250g	To prepare 30x Danieau's
High vacuum grease	Dow Corning	DCC000001242 150g	Silicon dioxide grease
KCl 99%	Sigma-Aldrich	S7643-5kg	To prepare 30x Danieau's
MgSO ₄ ·7H ₂ O Magnesium sulfate heptahydrate 98+% A.C.S reagent	Sigma-Aldrich	230291-500g	To prepare 30x Danieau's
Microinjector	Eppendorf		FemtoJet
Microloader tips	Eppendorf	930001007	0.5-20 ul
Micromanipulator	Maerzhaeuser Wetzlar	MM33 Rechts/00-42-101-0000/M3301R	
Micropipette holder	Intracel	P/N 50-00XX-130-1	
mMESSAGE mMACHINE SP6 Transcription Kit	Ambion	AM1340	To transcribe PCS-Transposase
NaCl BioXtra>99.5%	Sigma-Aldrich	P9541-1kg	To prepare 30x Danieau's
Nanophotometer			To measure DNA/RNA concentration
Needle puller	Sutter Instrument	P-1000	Flaming/Brown

NIR Apo 40x/0.80W	Nikon		Water-dipping-cone objective
N-Phenylthiourea Grade I, approx. 98%	Sigma	P7629-10G	PTU (prevents pigmentation)
Petri dishes	Sarstedt AG	821472	92 x 16mm
Plastic molds	Adaptive Science Tools	TU-1	For microinjections
Plexiglas cover-with a hole	Custom-made		The hole in the Plexiglas cover should be 3 mm larger than the diameter of the water-dipping-cone objective
Tea-strainer (Plastic)			To collect zebrafish eggs
Temperature controller	Warner Instrument Corporation	TC-344B	Dual Automatic Temperature Controller
Transfer pipettes	Sarstedt AG	86.1171	3.5mL plastic transfer pipettes
UMPlanFI 100x/1.00W	Olympus		Water-dipping-cone objective
UMPlanFLN 20x/0.50W	Olympus		Water-dipping-cone objective
Widefield microscope	Olympus	BX51WI	
PTU (50x Stock)			Dissolve 76 mg PTU in 50 ml distilled water Stir vigorously at room temperature Store at -20 °C in 1 ml aliquots Use at 1x working solution
Tricaine (20x Stock)			Dissolve 200 mg Tricaine in 48 ml distilled water Add 2 ml 1M Tris base (pH9) Adjust to pH 7 Store at -20 °C in 1 ml aliquots Use at 1x working solution
Danieau's Solution (30x Stock)			1,740 mM NaCl 21 mM KCl 12 mM MgSO ₄ ·7H ₂ O 18 mM Ca (NO ₃) ₂ 150 mM HEPES buffer Distilled water upto 1 L Store at 4 °C Use at 0.3x working solution