

Materials List for

4D Light-sheet Imaging of Zebrafish Cardiac Contraction

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Citation

Zhang, X., Saberigarakani, A., Almasian, M., Hassan, S., Nekkanti, M., Ding, Y. 4D Light-sheet Imaging of Zebrafish Cardiac Contraction. *J. Vis. Exp.* (203), e66263, doi:10.3791/66263 (2024).

Date Published

January 5, 2024

DOI

10.3791/66263

URL

jove.com/video/66263

Materials

Name	Company	Catalog Number	Comments
RESOURCE	SOURCE/Reference	IDENTIFIER	
Animal models			
<i>Tg(myl7:nucGFP)</i> transgenic zebrafish	Burns Lab in Boston Children's Hospital	ZDB-TGCONSTRCT-070117-49	
Software and algorithms			
MATLAB	The MathWorks Inc.	R2023a	
LabVIEW	National Instruments Corporation	2017 SP1	
HCIImage Live	Hamamatsu Photonics	4.6.1.2	
Python	The Python Software Foundation	3.9.0	
Fiji-ImageJ	Schneider et al. ¹⁸	1.54f	
3DeeCellTracker	Chentao Wen et al. ¹⁵	v0.5.2	
Unity	Unity Software Inc.	2020.3.2f1	
Amira	Thermo Fisher Scientific	2021.2	
3D Slicer	Andriy Fedorov et al. ¹⁷	5.2.1	
ITK SNAP	Paul A Yushkevich et al. ¹⁶	4	
Light-sheet system			
Cylindrical lens	Thorlabs	ACY254-050-A	
4X Illumination objective	Nikon	MRH00045	
20X Detection objective	Olympus	1-U2M585	
sCMOS camera	Hamamatsu	C13440-20CU	
Motorized XYZ stage	Thorlabs	PT3/M-Z8	
Two-axis tilt stage	Thorlabs	GN2/M	
Rotation stepper motor	Pololu	1474	
Fluorescent beads	SpheroTech	FP-0556-2	
473nm DPSS Laser	Laserglow	R471003GX	
532nm DPSS laser	Laserglow	R531003FX	
Microinjector and vacuum pump			
Microinjector	WPI	PV850	

Vacuum pump	Welch	2522B-01	
Pre-Pulled Glass Pipettes	WPI	TIP10LT	
Capillary tip for gel loading	Bio-Rad	2239912	
Virtual reality hardware			
VR headset	Meta	Quest 2	
30mg/L PTU solution			
PTU	Sigma-Aldrich	P7629	
1X E3 working solution	-	-	
1% Agarose	-	-	
Low-melt agarose	Thermo Fisher	16520050	
Deionized water	-	-	
10g/L Tricaine stock solution			
Tricaine	Syndel	SYNC-M-GR-US02	
Deionized water	-	-	
Sodium bicarbonate	Sigma-Aldrich	S6014	
150mg/L Tricaine working solution			
10g/L Tricaine stock solution	-	-	
Deionized water	-	-	
60X E3 stock solution			
Sodium Chloride	Lab Animal Resource Center (LARC), The University of Texas at Dallas	NaCl	
Potassium Chloride	-	KCL	
Calcium Chloride Dihydrate	-	CaCl ₂ x 2H ₂ O	
Magnesium Sulfate Heptahydrate	-	MgSO ₄ x 7H ₂ O	
RO Water	-	-	
1X E3 working solution			
60X E3 stock solution	Lab Animal Resource Center (LARC), The University of Texas at Dallas	-	
RO Water	-	-	
1% Methylene Blue (optional)	-	C ₁₆ H ₁₈ ClN ₃ S	