

Alignment of Visible-Light Optical Coherence Tomography Fibergrams with Confocal Images of the Same Mouse Retina

Shichu Chang¹, Wenjin Xu¹, Weijia Fan², John A. McDaniel¹, Marta Grannonico¹, David A. Miller², Mingna Liu¹, Hao F. Zhang², Xiaorong Liu^{1,3,4,5}

¹Department of Biology, University of Virginia ²Department of Biomedical Engineering, Northwestern University ³Department of Ophthalmology, University of Virginia ⁴Program in Fundamental Neuroscience, University of Virginia ⁵Department of Psychology, University of Virginia

Corresponding Author

Xiaorong Liu

xl8n@virginia.edu

Citation

Chang, S., Xu, W., Fan, W., McDaniel, J.A., Grannonico, M., Miller, D.A., Liu, M., Zhang, H.F., Liu, X. Alignment of Visible-Light Optical Coherence Tomography Fibergrams with Confocal Images of the Same Mouse Retina. *J. Vis. Exp.* (196), e65237, doi:10.3791/65237 (2023).

Date Published

June 30, 2023

DOI

10.3791/65237

URL

jove.com/video/65237

Materials

Name	Company	Catalog Number	Comments
Equipment			
Halo 100	Opticent Health, Evanston, IL		
Zeiss LSM800 microscope	Carl Zeiss		
Drugs and antibodies			
4% paraformaldehyde (PFA)	Santuz Cruz Biotechnology, SC-281692		1-2 drops
Bovine serum albumin powder	Fisher Scientific, BP9706-100		1:10
Donkey anti Mouse Alexa Fluor 488 dye	Thermo Fisher Scientific, Cat# A-21202		1:1,000
Donkey anti rat Alexa Fluor 594 dye	Thermo Fisher Scientific, Cat# A-21209		1:1,000
Euthasol (a mixture of pentobarbital sodium (390 mg/mL) and phenytoin sodium (50 mg/mL))	Covetrus, NDC 11695-4860-1		15.6 mg/mL
Ketamine	Covetrus, NADA043304		114 mg/kg
Mouse anti-Tuj1	A gift from Anthony J. Spano, University of Virginia		1:200
Normal donkey serum(NDS)	Millipore Sigma, S30-100 mL		1:100
Phosphate-buffered saline (PBS, 10x), pH 7.4 (Contains 1370 mM NaCl, 27 mM KCl, 80 mM Na ₂ HPO ₄ , and 20 mM KH ₂ PO ₄)	Thermo Fisher Scientific, Cat# J62036.K3		1:10
Rat anti-ICAM-2	BD Pharmingen, Cat#553325		1:500
Tropicamide drops	Covetrus, NDC17478-102-12		
Triton X-100 (Reagent Grade)	VWR, CAS: 9002-93-1		1:20

Vectashield mounting medium	Vector Laboratories Inc. H2000-10		
Xylazine	Covetrus, NDC59399-110-20		17 mg/kg