

# Deep-Tissue Three-Photon Fluorescence Microscopy in Intact Mouse and Zebrafish Brain

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jove.com/video/63213

## Materials

Name	Company	Catalog Number	Comments
5% Povidone-iodine	Amazon	NDC 67818-155-32	Aceptical cleaning of surgical areas
70% Ethanol	Thermo Fisher Scientific	CAS 64-17-5	Aceptical cleaning of surgical areas
Agarose	Sigma	A4718-256	Preparing zebrafish chamber
Atropine	Cornell Veterinary Care		
Bergamo II	Thorlabs		Multiphoton Imaging Microscope
Bupivacaine	Cornell Veterinary Care		
Dexamethasone	Cornell Veterinary Care		
Donut shape glass (ID4.5, OD6.5)	Potomac Photonics		Cover glass used for craniotomy
eye ointment (or topical ophthalmic ointment)	Puralube Vet Ointment	NDC 17033-211-38	Used as a lubricant to prevent irritation or to relieve dryness of the eye during surgery and anesthesia
GaAsP Amplified PMT	Thorlabs	PMT2100	PMT detector
Glucose	Cornell Veterinary Care		
Glycopyrrolate	Cornell Veterinary Care		
Heater (800 W)	Finnex		Aquarium heater for zebrafish water)
Isoflurane USP 250 mL	Piramal	NDC 66794-0013-25	For anesthesia of mice
Ketoprofen	Cornell Veterinary Care		
Kimwipes	Kimtech		Laboratory tissue for preparing zebrafish
Nanofil syringe (10 micrometer) with 36 G needle	WPI	NANOFIL + NF36BV	Syringe and needle for injection of pancuronium bromide
Optical Adhesive	Norland	NOA 68	To stick round coverslip and donut shape glass together.
Pancuronium Bromide	Cornell Veterinary Care		
Peristaltic Pump	Elemental Science	ESI MP2	Water pump for zebrafish setup
Polyethylene tubing (I.D. 0.58 mm., O.D. 0.965 mm.)	Elemental Science	MP2 pump tubing	Tubing that goes in the mouth of the zebrafish

Round Cover Slip German Glass #1.5, 5 mm	Electron Microscopy Sciences	7229605	Cover glass used for craniotomy
Spirit-NOPA	Spectra Physics		Tunable Optical Parametric Amplifier
SR400	Stanford Research Systems	SR400	Photon counter
Standard Photodiode Power Sensor	Thorlabs	S122C	Power detector
Sterilized phosphate buffered saline (PBS)	Millipore Sigma	SKU 806552-500ml	Used during mouse brain surgery
Surgical drape	Dynarex disposable towel drape	4410	For aseptical mouse surgery
Thin strip boxing wax	Corning Rubber Co., Inc.		Holding tubing in place in zebrafish chamber
ThorImage	Thorlabs		Image acquisition software
Tricaine (Ethyl-m-aminobenzoate methanesulfonate salt)	MP	103106	Zebrafish anesthesia and euthanasia
Tygon tubing (I.D. 1/16 in., O.D. 1/8 in.)	Tygon		Tubing for water flow for zebrafish preparation
VaporGuard	VetEquip	931401	For recycling isoflurane
Vetbond tissue adhesive	3M	1469SB	To glue the glass window on the mouse skull, and to glue the laboratory tissue when preparing the fish.
XLPLN25XWMP2	Olympus		Multiphoton Excitation Dedicated Objective