

Materials List for:

High-Throughput, Multi-Image Cryohistology of Mineralized Tissues

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Materials

Name	Company	Catalog Number	Comments
10% neutral buffered formalin	Sigma Aldrich	HT501128-4L	Multiple suppliers available. Toxic. Can be substituted with 4% paraformaldehyde.
Sucrose	Sigma Aldrich	S9378	Multiple suppliers available.
PBS	Sigma Aldrich	P5368	Multiple suppliers available.
Cryomolds	Fisher Scientific	Fisherbrand #22-363-554	Different sizes can be used depending on tissue
Cryomatrix	Thermo Scientific	6769006	Can be substituted with other cryomatrices. However, PVA/PEG-based resins have worked best in our hands.
2-methyl-butane	Sigma Aldrich	M32631	Multiple suppliers available.
Cryostat	Leica Biosystems	3050s	Can be substituted with other brands/models.
Specimen disc	Leica Biosystems	14037008587	Can be substituted with other brands/models.
Cryostat blades	Thermo Scientific	3051835	Can be substituted with other brands/models.
Cryotape	Section Lab	Cryofilm 2C	
Roller	Electron Microscopy Sciences	62800-46	Can be substituted with other brands/models.
Plastic microscope slides	Electron Microscopy Sciences	71890-01	Can be substituted with other brands/models.
Glass microscope slides	Thermo Scientific	3051	Can be substituted with other brands/models.
Norland Optical Adhesive, 61	Norland Optical	Norland Optical Adhesive, 61	
UV Black Light	General Electric	F15T8-BLB	
Glacial acetic acid	Sigma Aldrich	ARK2183	Multiple suppliers available.
Chitosan	Sigma Aldrich	C3646	Multiple suppliers available.
InSpeck red microspheres	ThermoFisher Scientific	I-14787	
InSpeck green microspheres	ThermoFisher Scientific	I-14785	
Calcein Blue	Sigma Aldrich	M1255	Multiple suppliers available.
Calcein	Sigma Aldrich	C0875	Multiple suppliers available.
Alizarin complexone	Sigma Aldrich	A3882	Multiple suppliers available.
Demeclocycline	Sigma Aldrich	D6140	Multiple suppliers available.
NaHCO ₃	Sigma Aldrich	S5761	Multiple suppliers available.
Glycerol	Sigma Aldrich	G5516	Multiple suppliers available.

ELF 97 yellow fluorescent acid phosphatase substrate	ThermoFisher Scientific	E-6588	
DAPI	ThermoFisher Scientific	62247	Multiple suppliers available. Can be substituted with Hoechst 33342 or other nuclear dyes.
TO-PRO-3 (Cy5 nuclear counterstain)	ThermoFisher Scientific	T3605	
Propidium Iodide	ThermoFisher Scientific	R37108	Multiple suppliers available.
Sodium acetate anhydrous	Sigma Aldrich	S2889	Multiple suppliers available.
sodium tartrate dibasic dihydrate	Sigma Aldrich	T6521	Multiple suppliers available.
Sodium nitrite	Sigma Aldrich	S2252	Multiple suppliers available.
Tris	Sigma Aldrich	15504	Multiple suppliers available.
MgCl ₂ hexahydrate	Sigma Aldrich	M9272	Multiple suppliers available.
NaCl	Sigma Aldrich	S7653	Multiple suppliers available.
Fast Red TR Salt	Sigma Aldrich	F8764	Multiple suppliers available. Can also be substituted with other substrate kits such as Vector Blue (Vector Laboratories, Cat# SK-5300)
Naphthol AS-MX	Sigma Aldrich	N4875	Multiple suppliers available.
N,N dimethylformamide	Sigma Aldrich	D158550	Multiple suppliers available.
Toluidine blue O	Sigma Aldrich	T3260	Multiple suppliers available.
Axio Scan.Z1	Carl Zeiss AG	Axio Scan.Z1	Other linear or tiled scanners may also be used.
DAPI Filter Set	Chroma Technology Corp.	49000	
CFP Filter Set	Chroma Technology Corp.	49001	
GFP Filter Set	Chroma Technology Corp.	49020	
YFP Filter Set	Chroma Technology Corp.	49003	
Custom yellow (ELF 97) Filter Set	Chroma Technology Corp.	custom; HQ409sp, HQ555/30m, 425dxc	
TRITC Filter Set	Chroma Technology Corp.	49004	
Cy5 Filter Set	Chroma Technology Corp.	49009	
CryoJane Tape Transfer System	Electron Microscopy Sciences	62800-10	Multiple suppliers available.
CryoJane Tape Windows	Electron Microscopy Sciences	62800-72	Multiple suppliers available.
CryoJane Adhesive Slides	Electron Microscopy Sciences	62800-4X	Multiple suppliers available.