

Materials List for:

3D Imaging of Soft-Tissue Samples using an X-ray Specific Staining Method and Nanoscopic Computed Tomography

Madleen Busse^{*1}, Mark Müller^{*1}, Melanie A. Kimm², Simone Ferstl¹, Sebastian Allner¹, Klaus Achterhold¹, Julia Herzen¹, Franz Pfeiffer^{1,2}

¹Department of Physics and Munich School of BioEngineering, Technical University of Munich

²Department of Diagnostic and Interventional Radiology, School of Medicine and Klinikum rechts der Isar, Technical University of Munich

*These authors contributed equally

Correspondence to: Madleen Busse at madleen.busse@tum.de

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Materials

| Name | Company | Catalog Number | Comments |
|--|--------------------------|----------------|---|
| 50-ml centrifuge tube by Falcon | VWR | 734-0453 | |
| Formaldehyde solution, 37% | Carl Roth | CP10.2 | acid-free, stabilized with ~10% MeOH |
| Glacial acetic acid | Alfa Aesar | 36289.AP | |
| Eosin Y disodium salt | Sigma-Aldrich | E4382 | certified by Biological Stain Commission |
| Phosphate Buffered Saline (PBS) | Merck | L1825 | Dulbecco's formulation, w/o calcium and magnesium |
| Sample Tubes by Nalgene | Carl Roth | ATK5.1 | |
| Rocking Shaker ST5 | CAT | 60281-0000 | |
| Cellulose tissue paper | VWR | 115-0600 | |
| Forceps, by USBECK Laborgeräte | VWR | 232-0096 | |
| Microcentrifuge tubes by Eppendorf | VWR | 211-2120 | safe-lock, 2.0 ml |
| Ethanol absolute by Baker Analyzed | VWR | 80252500 | |
| Disposable safety scalpel by Aesculap | VWR | AESCBA210 | |
| Petri dish by Sterilin | VWR | 391-2019 | |
| Plastic pasteur pipette | Carl Roth | EA68.1 | graduated, 1 ml |
| Desiccator by Duran | VWR | SCOT247826954 | |
| Silicone grease by Bayer | Sigma-Aldrich | 85404 | high-vacuum |
| Carbon dioxide cylinder with standpipe | Linde | 3700113 | 10 kg, short |
| micro-porous treatment capsule | PLANO GmbH | 4614 | pore size 78 µm (B) |
| Bal-Tec CPD 030 | Bal-Tec AG | | CO ₂ as drying agent |
| Stemi 2000-C stereomicroscope with KL 1500 LCD | Zeiss | | this stereomicroscope has been updated ⁽¹⁾ |
| Zeiss Xradia Versa 500 | Zeiss | | this microCT scanner has been updated ⁽²⁾ |
| Avizo Fire 8.1 | Thermo Fisher Scientific | | |
| PILATUS detector as part of the nanoCT scanner | Dectris | | single-photon counting detector ^(4,5) , there are commercially available nanoCT systems available ^(6,7) |

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| nanofocus X-ray source as part of the nanoCT scanner | Excillum | | high-flux nanofocus X-ray transmission tube ⁽³⁾ ; there are commercially available nanoCT systems available ^(6,7) |
| (1) Germany, Z. ZEISS product information: ZEISS stereomicroscopes https://www.micro-shop.zeiss.com/de/de/system/Stereomikroskope/1006 > (September 06, 2019). | | | |
| (2) Germany, Z. ZEISS product information: ZEISS Xradia 510 Versa https://www.zeiss.com/microscopy/int/products/x-ray-microscopy/zeiss-xradia-510-versa.html > (April 10, 2019). | | | |
| (3) Nachtrab, F. et al. Development of a Timepix based detector for the NanoXCT project. Journal of Instrumentation 10 (11), C11009, (2015). | | | |
| (4) Kraft, P. et al. Performance of single-photon-counting PILATUS detector modules. Journal of Synchrotron Radiation 16 (3), 368-375, (2009). | | | |
| (5) Kraft, P. et al. Characterization and calibration of PILATUS detectors. IEEE Transactions on Nuclear Science 56 (3), 758-764, (2009). | | | |
| (6) Germany, Z. ZEISS product information: ZEISS Xradia 810 Ultra https://www.zeiss.com/microscopy/int/products/x-ray-microscopy/xradia-810-ultra.html > (April 9 2019). | | | |
| (7) Company, G. E. GE product information: Phoenix nanotom m, https://www.gemeasurement.com/sites/gemc.dev/files/geit-31344en_nanotom_m_0517.pdf > (April 10, 2019). | | | |