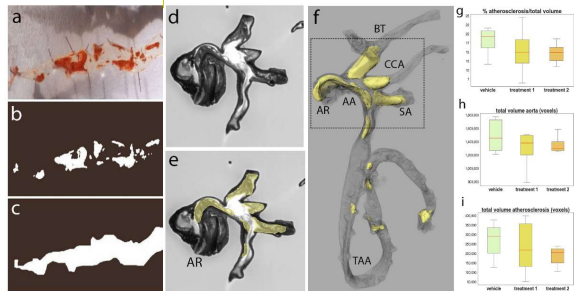


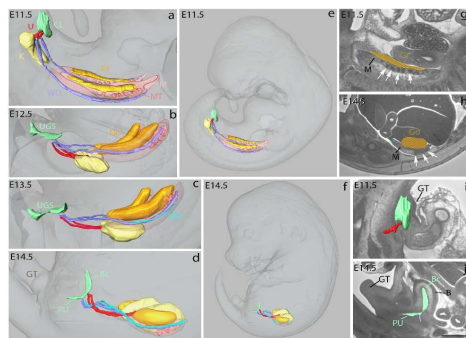
# New "Histo3D" HREM-based Imaging System for Qualitative and Quantitative Data in Phenotyping Altered Embryos and Adult Mice

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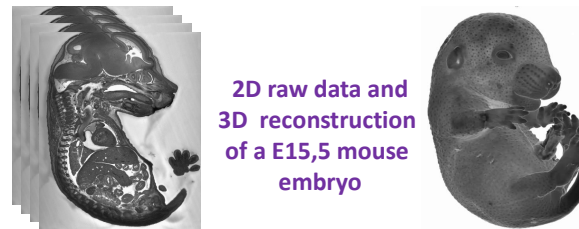
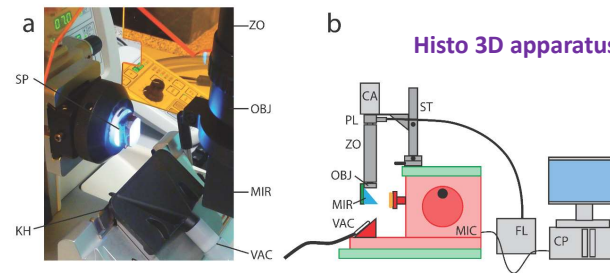
Surface (classical En Face staining (a-c)) and volume (HREM (d-i)) quantification of atherosclerotic plaques in adult mouse aortas. AR: aortic root, AA: aortic arch, TAA: thoracoabdominal aorta, BT: brachiocephalic trunk, CCA: left common carotid artery, SA: left subclavian artery.



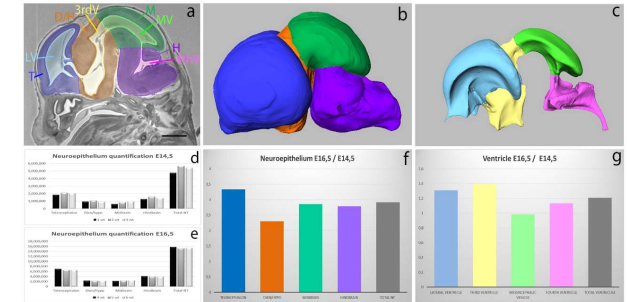
3D representation of the developing urogenital system of mouse embryos from E11.5 to E14.5. M: mesonephric mesenchyme, MT: mesonephric tubules (white arrows), UGS: urogenital sinus, GT: genital tubercle, PU: pelvic urethra, B: urinary bladder, K: metanephros (definitive kidney), Go: gonad, Gr: genital ridge, WD: Wolffian duct, MD: Müllerian duct, CL: lumen of cloaca, U: ureteric bud (E11.5) or ureters, Bc: urinary bladder cavity

High-Resolution Episcopic Microscopy (HREM) is a histological-based technique that permits researchers to obtain serial 2D aligned stacks of high-resolutive images to perform 3D reconstructions. Three-dimensional visualization allows for an appreciation of topology and morphology of structures as well as for accurate volumetric quantitation and comparison of individual embryos in a manner that is impossible with histology. A new "Histo3D" HREM-based system was developed.

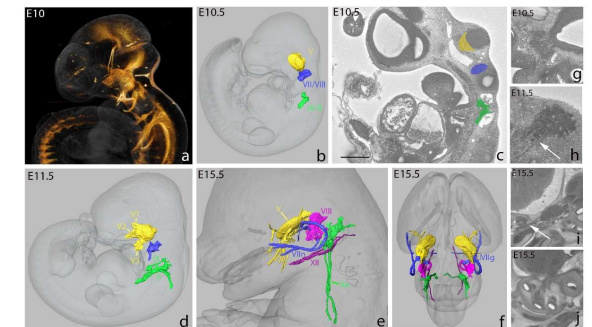
## View of the block for image capture



2D raw data and 3D reconstruction of a E15.5 mouse embryo



HREM quantification of neuroepithelium tissue and ventricular system in E14.5 and E16.5 mouse fetuses. T: telencephalon, D/H: diencephalon and hypothalamus, M: midbrain, H: hindbrain, LV: lateral ventricles, 3rd V: Third ventricle, MV: mesencephalic ventricle, 4th V: fourth ventricle.



Antineurofilament Whole-Mount immunostaining (a) and HREM 3D representation of cranial nerves and ganglia at E10.5, E11.5 and E15.5 (b-j). V: trigeminal ganglion, V1, V2, V3: ophthalmic (V1), maxillary (V2) and mandibular (V3) branches of the trigeminal nerve, VII/VIII: facioacoustic ganglion complex, VII: facial ganglion, IX/X: glossopharyngeal and vagus ganglion complex, IX: glossopharyngeal ganglion, X: vagus ganglion, Xn: vagus nerve, XII: hypoglossal nerve.



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