

Life Science Opportunities with a Compact Light Source

Liz Duke

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Zeit. Naturg., München, 1896.

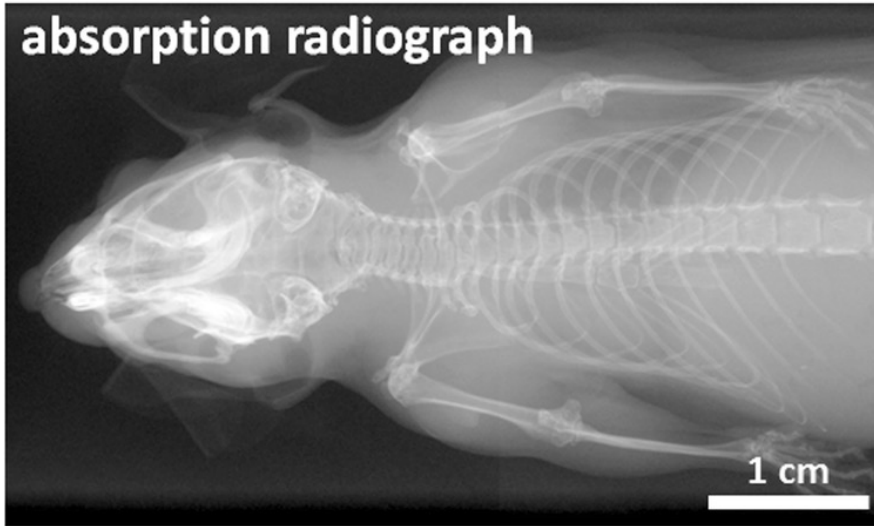
Hand des Anatomen Geheimrath von Kölliker.

Im Physikal. Institut der Universität Würzburg
mit X-Strahlen aufgenommen
von Professor Dr. W. C. Röntgen.

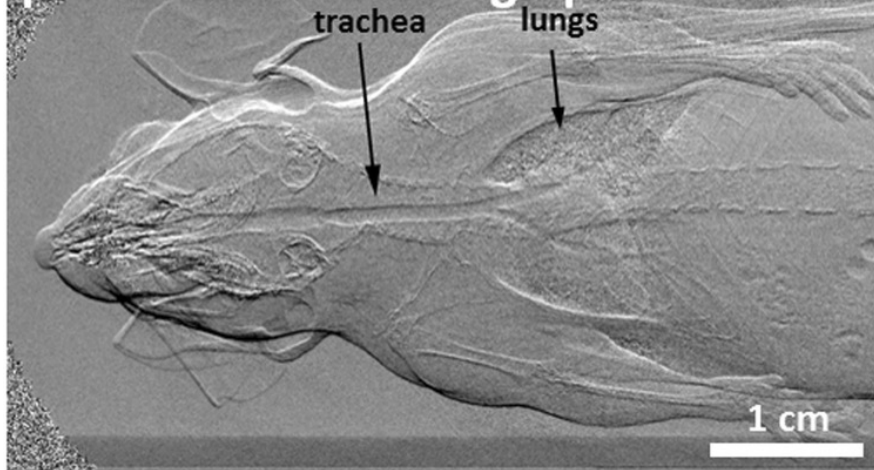
The Power of Phase

a rat sample

absorption radiograph

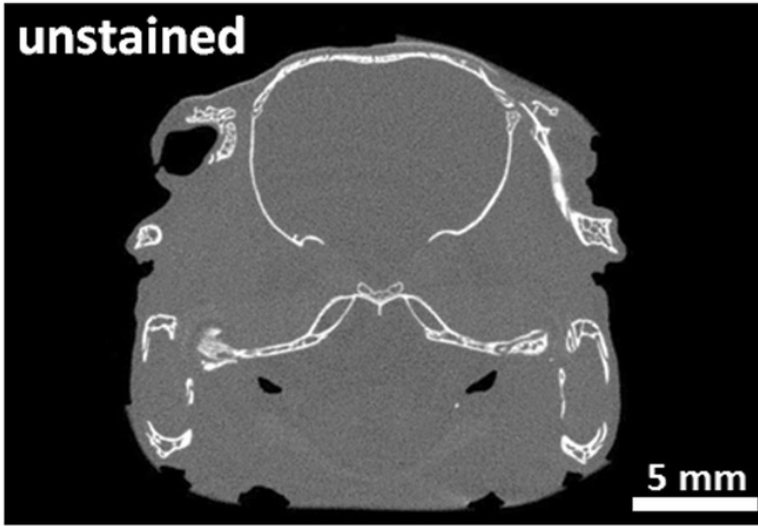


phase contrast radiograph

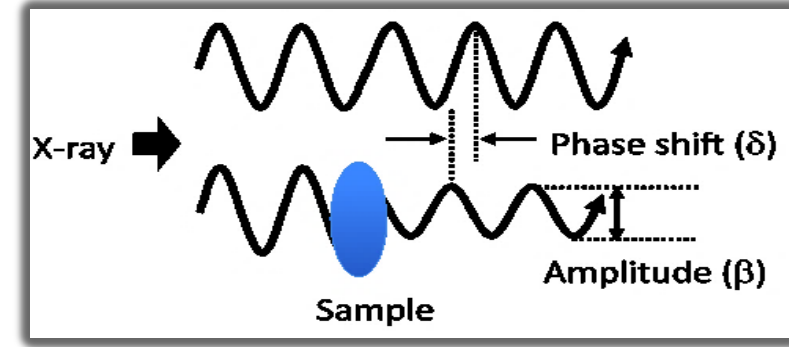


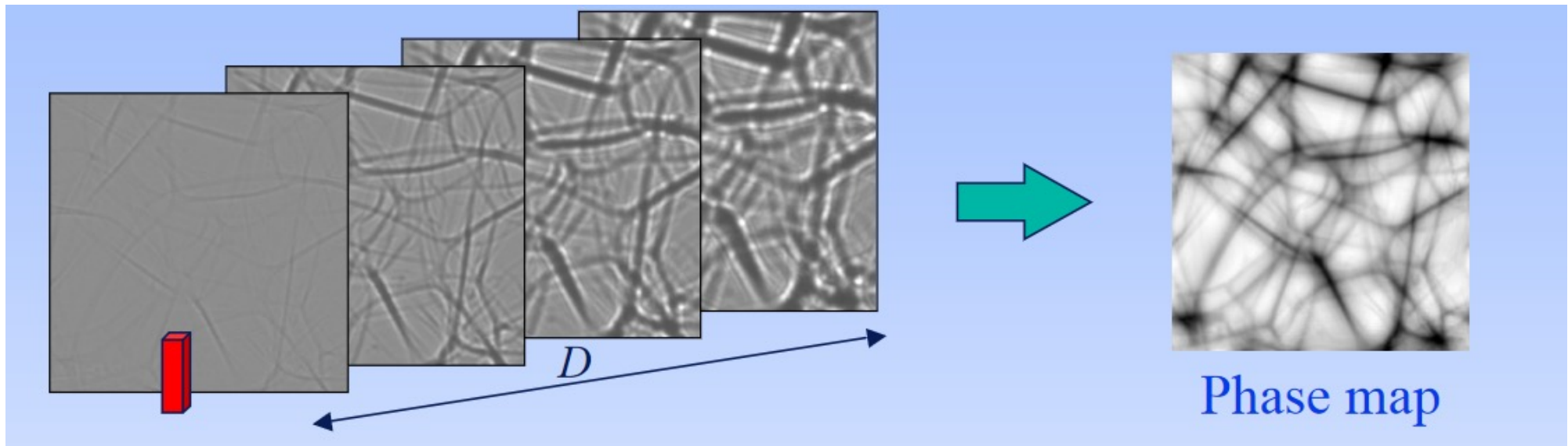
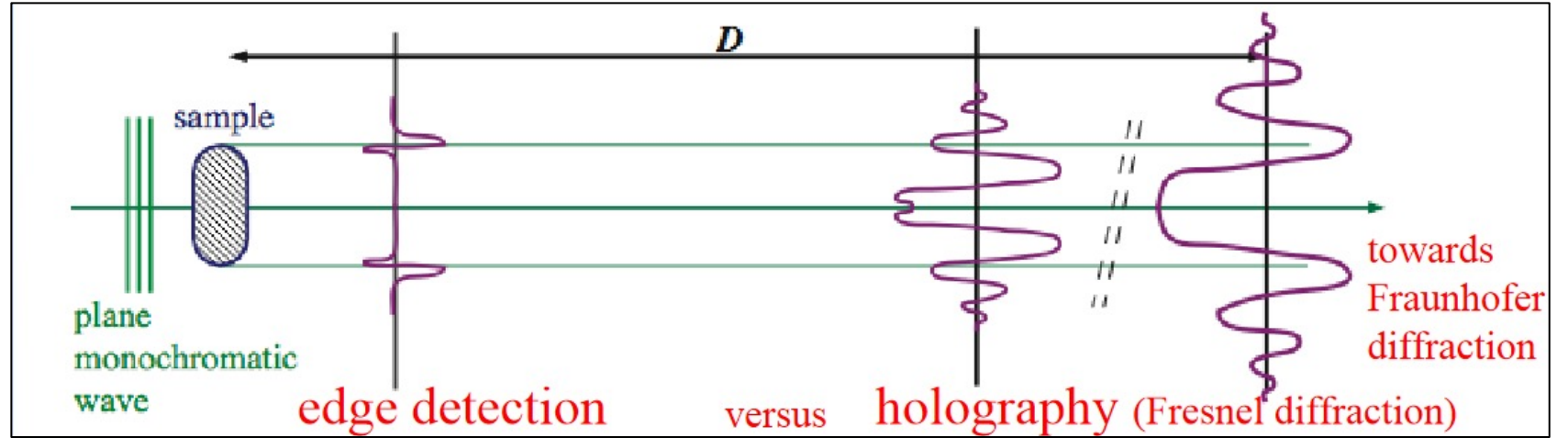
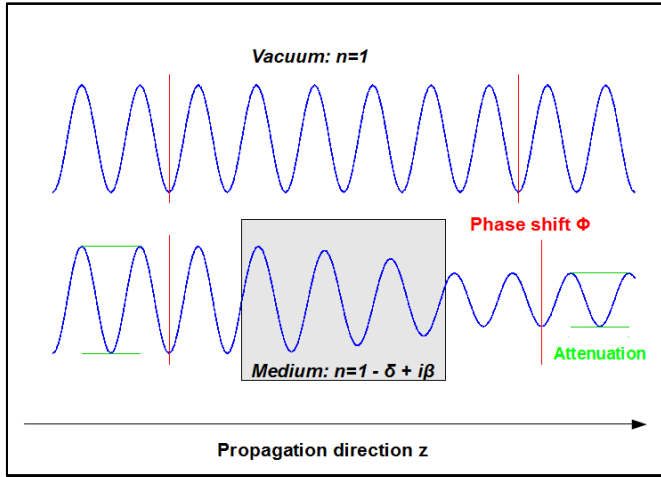
b alligator head

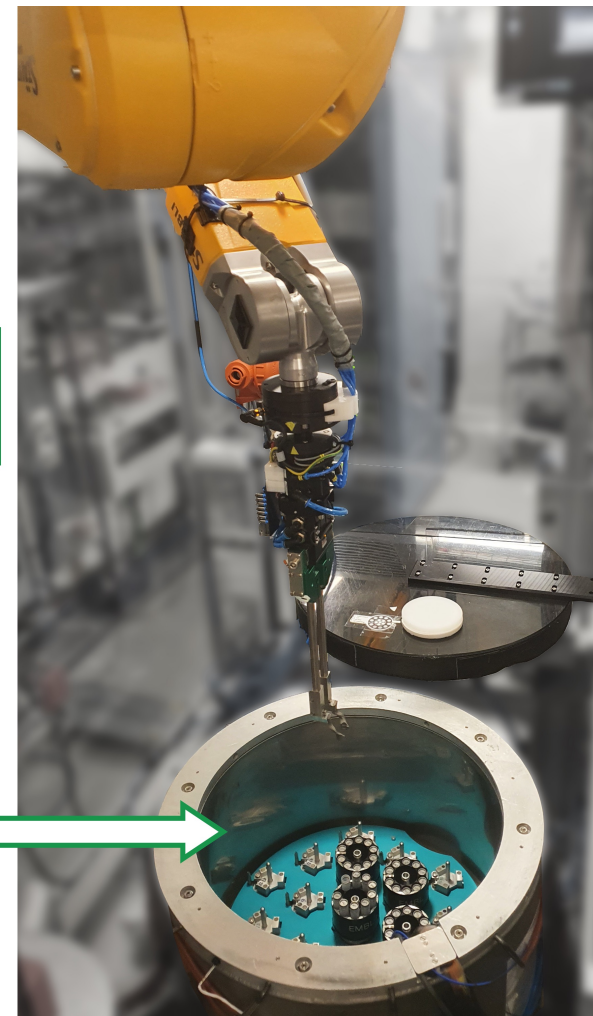
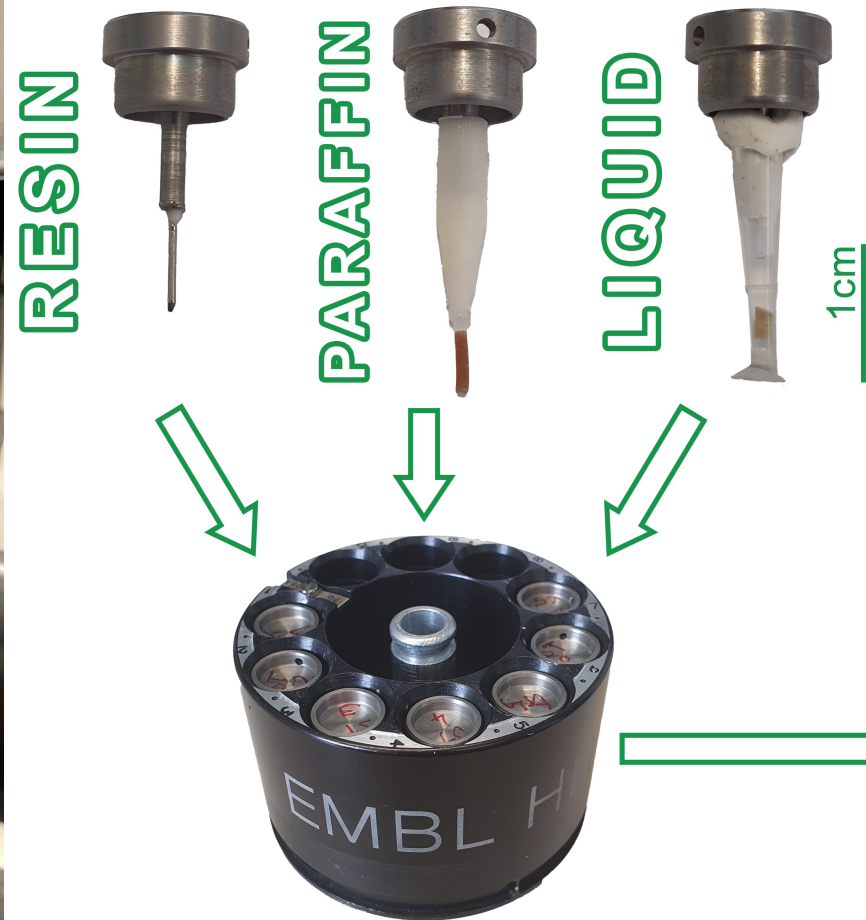
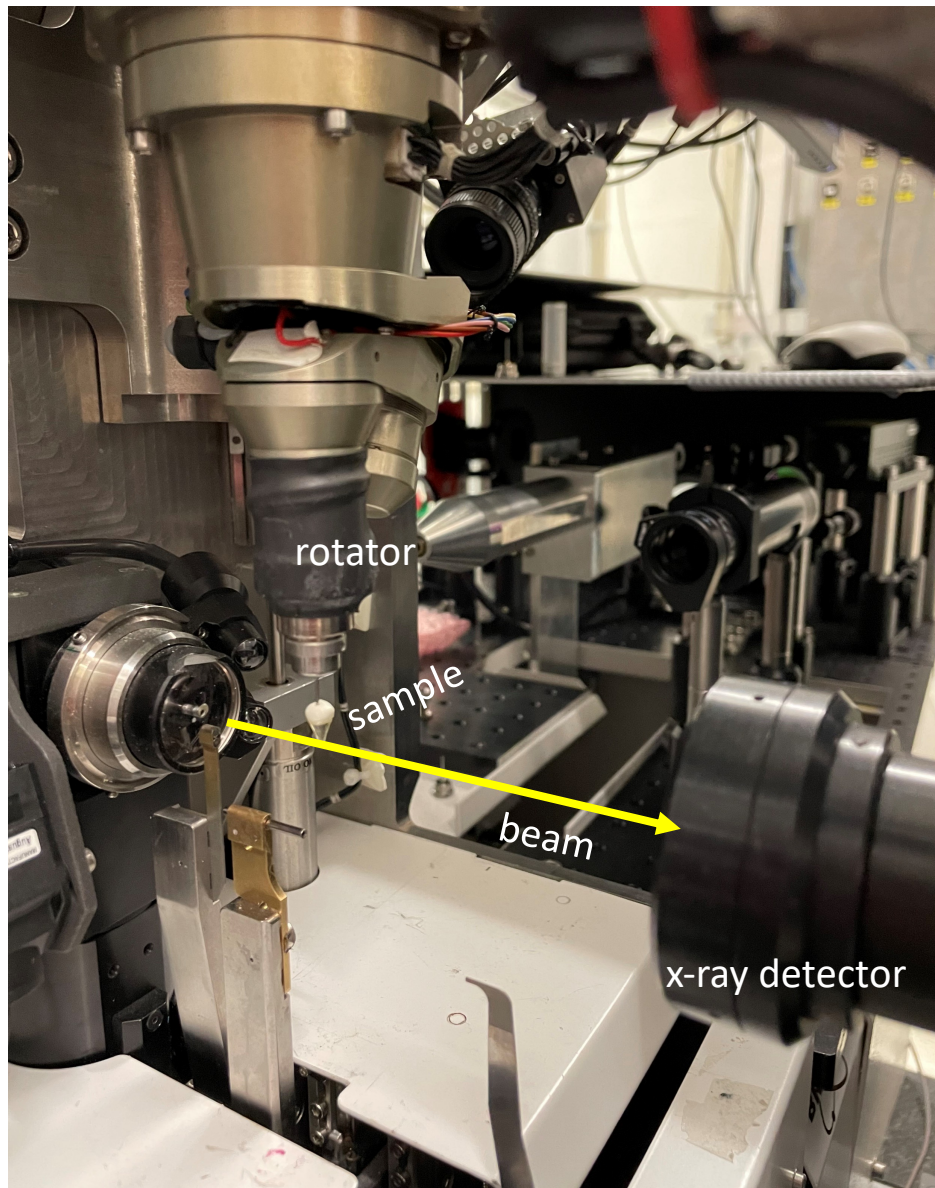
unstained

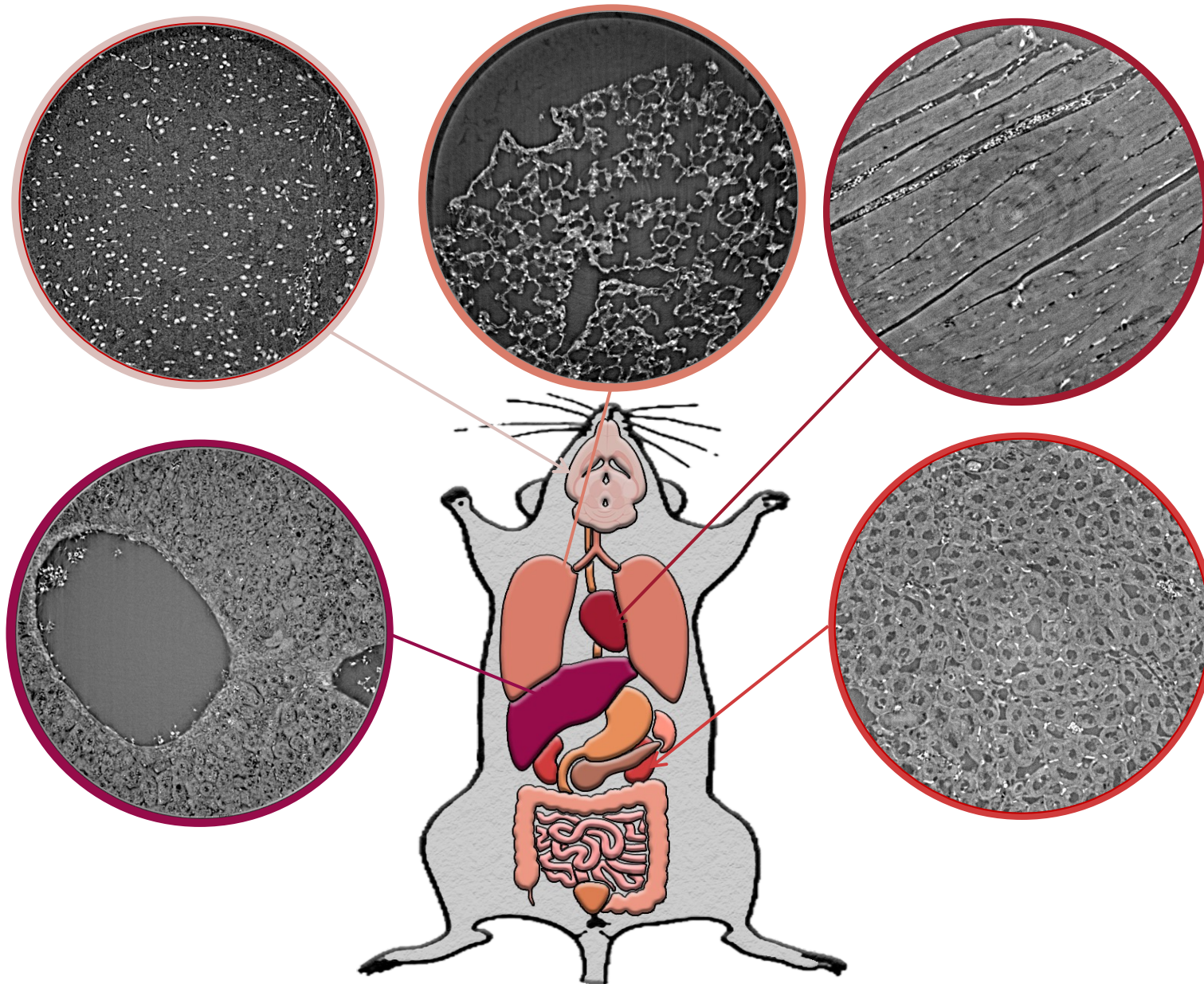


stained









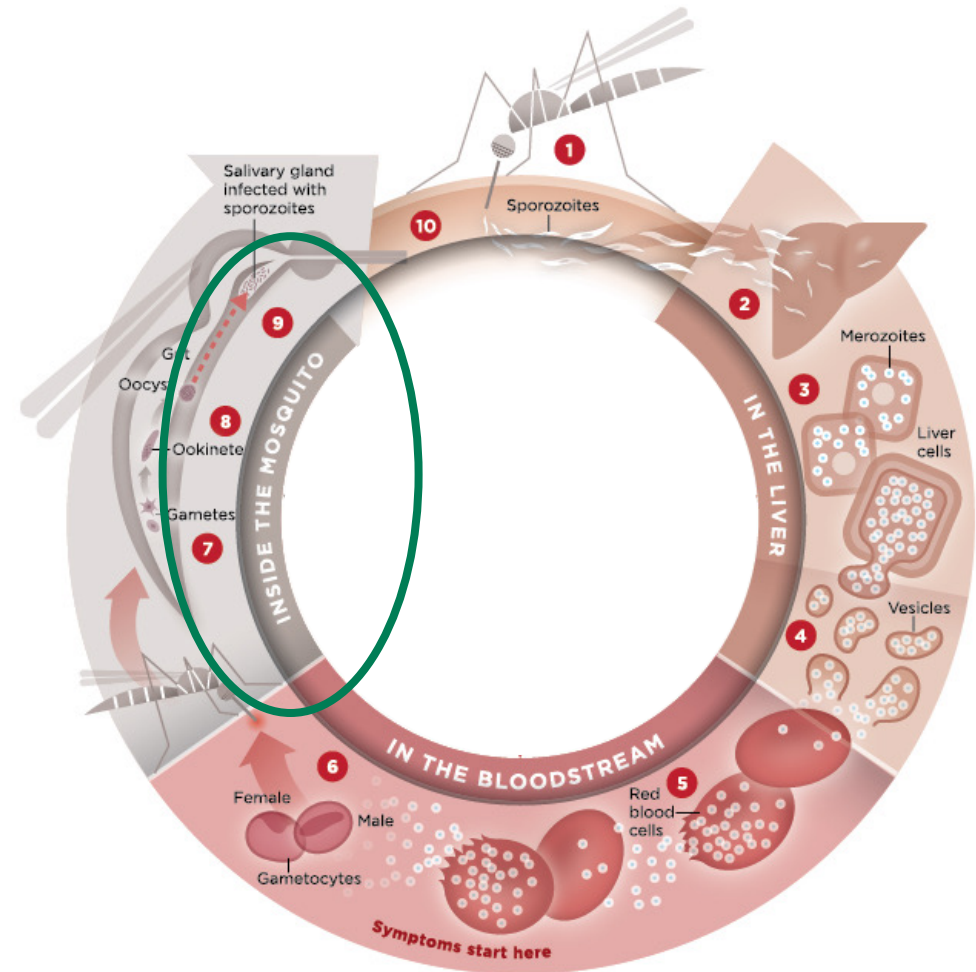
pixel size	330/660 nm
x-ray energy	12.7-18 keV (10-27 keV)
rotation angle	180°
projections	4 x 1800
exposure time per projection	10 ms
total exposure	4 x 18 s = 72 s

20x:
px-size: 330 nm
FOV: 0.660x0.660 mm
scintillator: LSO:Tb on YbSO 8 μ m

10x:
px-size: 660 nm
FOV: 1.32x1.32 mm
scintillator: LSO:Tb on YbSO, 8 μ m

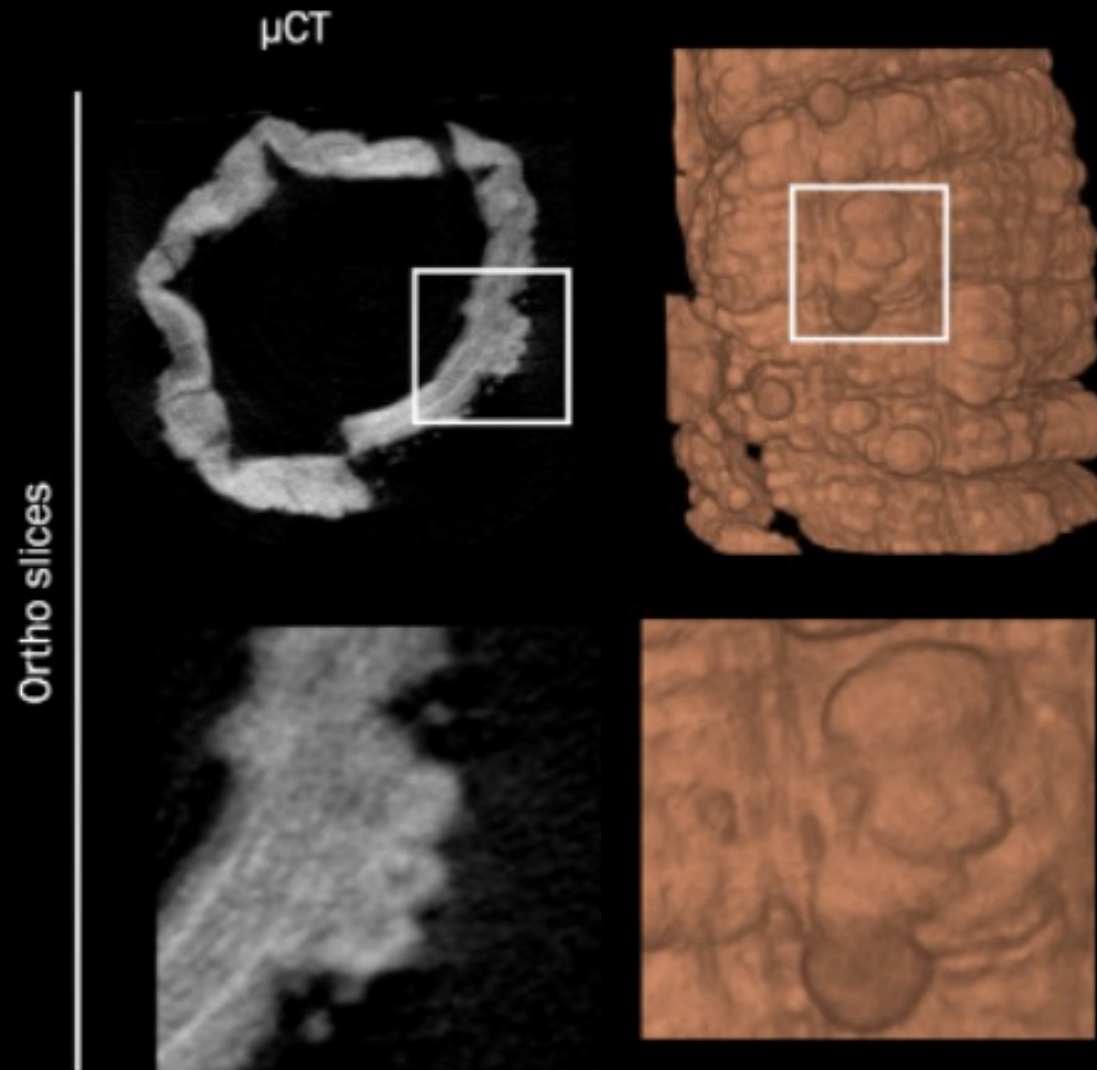
Malaria in the mosquito midgut

- Resin embedded mosquito samples prepared for electron microscopy
- HiTT for targeting of *Plasmodium berghei* oocysts



<https://www.malariavaccine.org/malaria-and-vaccines/vaccine-development/life-cycle-malaria-parasite>

Preliminary data from lab-based microCT of the midgut

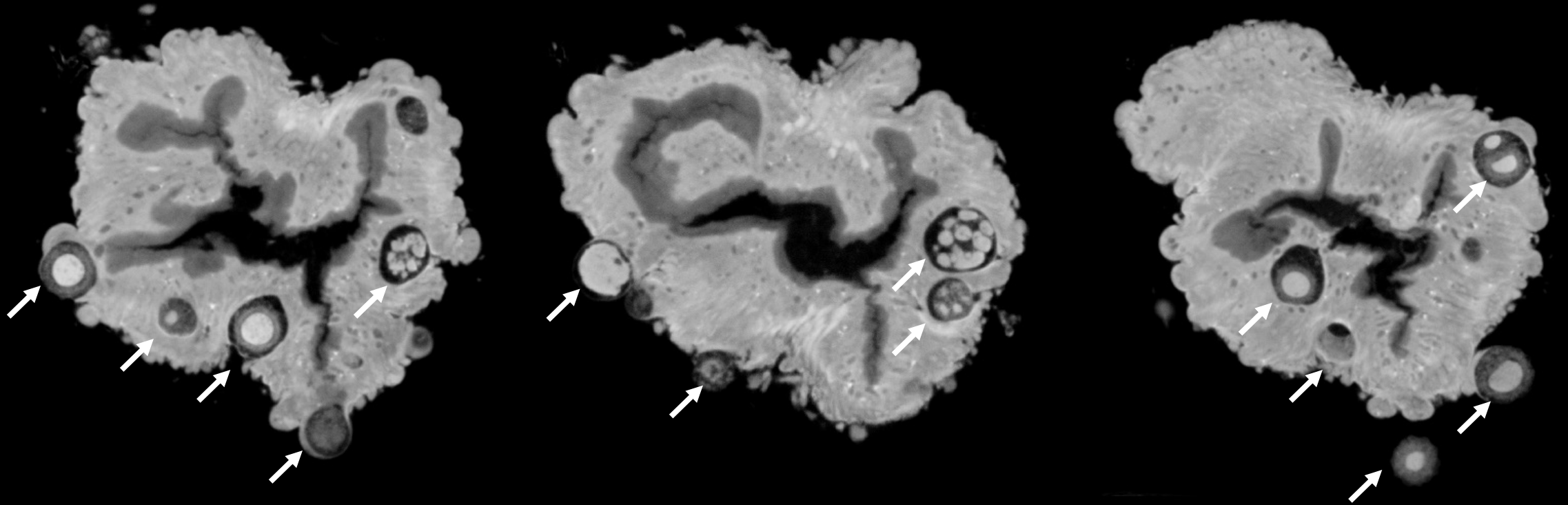


SkyScan μ CT

2 hour scan

1 μ m voxels

HiTT imaging of *Plasmodium berghei* in the mosquito midgut



Imaging plant samples

