

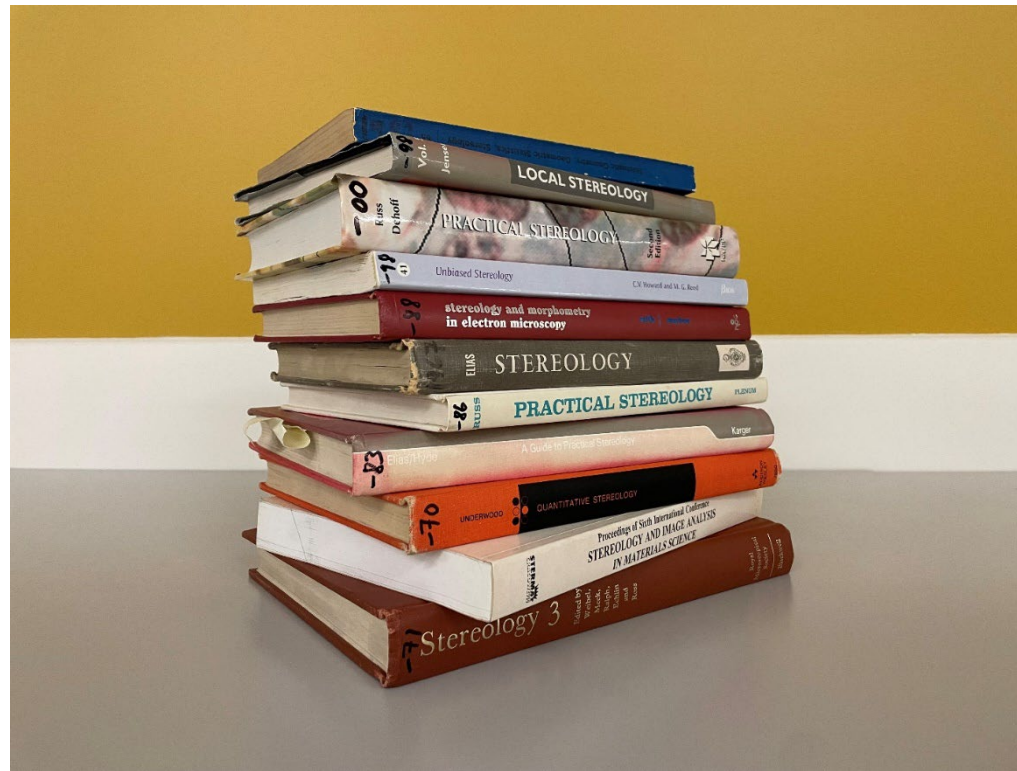
"VILDE" FRYSESNIT - FRA ZEBRAFINKER TIL SKILDPADDER

"VILDE" FRYSES NIT

- FRA ZEBRAFINKER TIL SKILDPADDER

- Hvem er vi
- Vævspræparering
- Dissektion
- Cryoprotection og Nedfrysning
- Cryoskæring
- Særlige udfordringer
- Udvalgte projekter
- Når det går galt

Center for Molekylær Morfologi Sektion for Stereologi & Mikroskopi ”Stereologien”

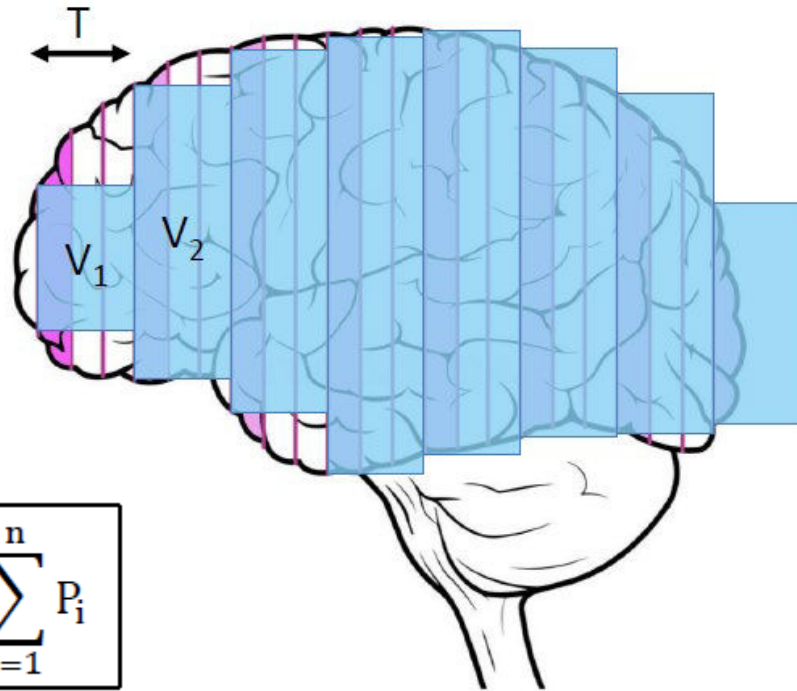


Læren om matematiske metoder som muliggør estimering af parametre i 3 dimensioner ud fra 2 dimensionale snit/billeder

$$V_1 = T \cdot A_1$$

$$V_2 = T \cdot A_2 \text{ etc.}$$

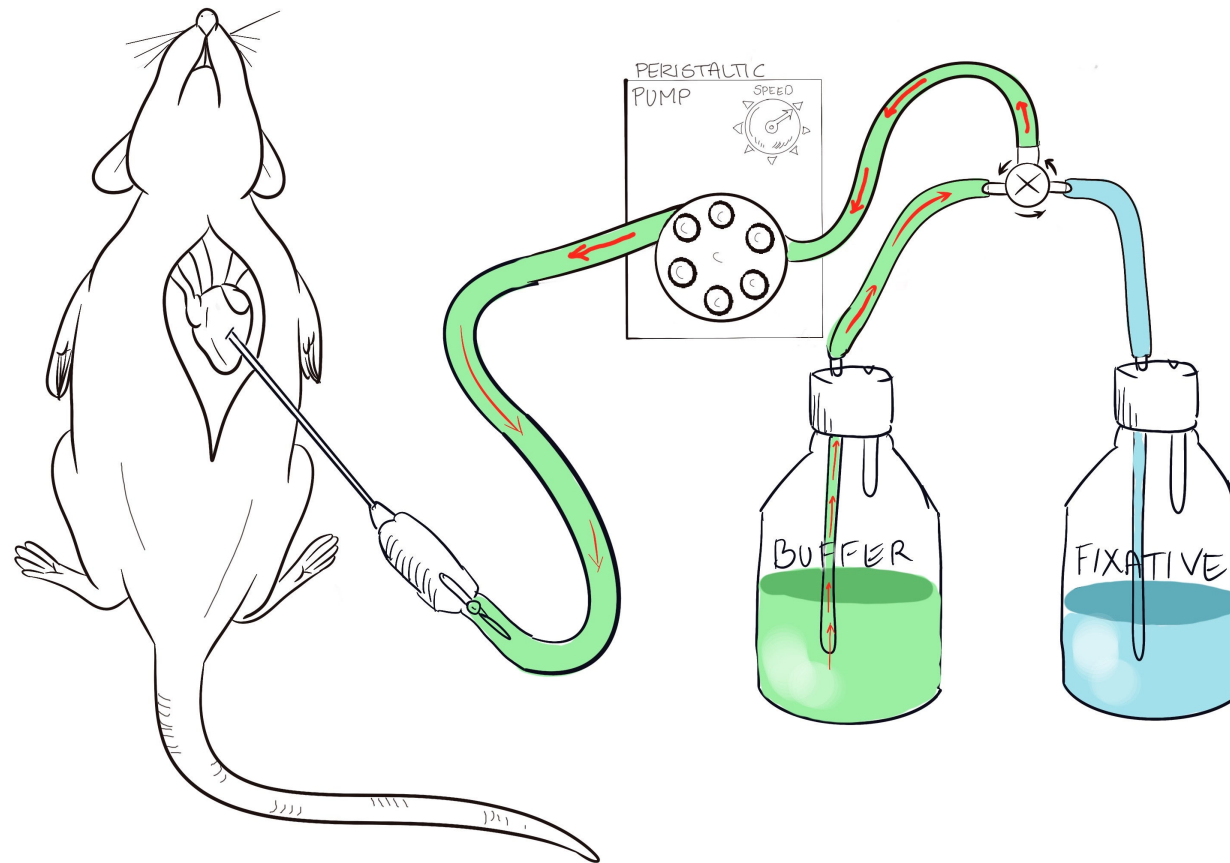
$$V := \bar{T} \cdot \sum_{i=1}^n A_i = \bar{T} \cdot (a/p) \cdot \sum_{i=1}^n P_i$$



Modified from:
<https://clipartxtras.com/download/a8044397b04a20b250c14ca0bd6e0be3efd6666e.html> (Accessed on 050718)

Stereologi giver redskaber til
en stikprøvetagning der giver et sikkert,
reproducerbart, og statistisk validt resultat

-Vævspræparering



Dissektion



PiB fails to map amyloid deposits in cerebral cortex of aged dogs with canine cognitive dysfunction

Rikke Fast¹, Anders Rodell^{2,3}, Albert Gjedde^{2,3,4}, Kim Mouridsen², Aage K. Alstrup³, Carsten R. Bjarkam^{5,6}, Mark J. West⁵, Mette Berendt¹ and Arne Møller^{2,3*}

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Foto: Trine Werenberg Mikkelsen

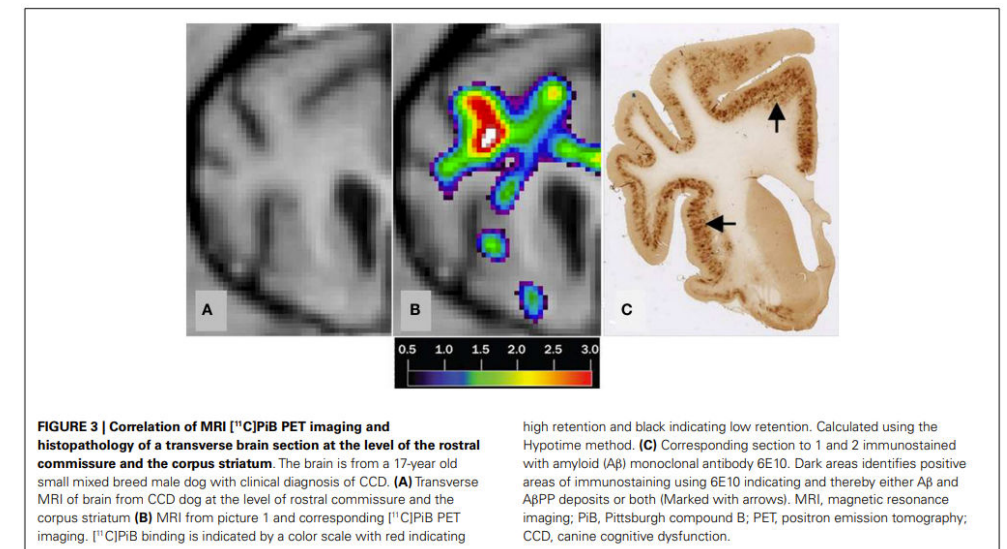


FIGURE 3 | Correlation of MRI [¹¹C]PiB PET imaging and histopathology of a transverse brain section at the level of the rostral commissure and the corpus striatum. The brain is from a 17-year old small mixed breed male dog with clinical diagnosis of CCD. **(A)** Transverse MRI of brain from CCD dog at the level of rostral commissure and the corpus striatum **(B)** MRI from picture 1 and corresponding [¹¹C]PiB PET imaging. [¹¹C]PiB binding is indicated by a color scale with red indicating

high retention and black indicating low retention. Calculated using the Hypotime method. **(C)** Corresponding section to 1 and 2 immunostained with amyloid (Aβ) monoclonal antibody 6E10. Dark areas identifies positive areas of immunostaining using 6E10 indicating and thereby either Aβ and AβPP deposits or both (Marked with arrows). MRI, magnetic resonance imaging; PiB, Pittsburgh compound B; PET, positron emission tomography; CCD, canine cognitive dysfunction.

Dissektion

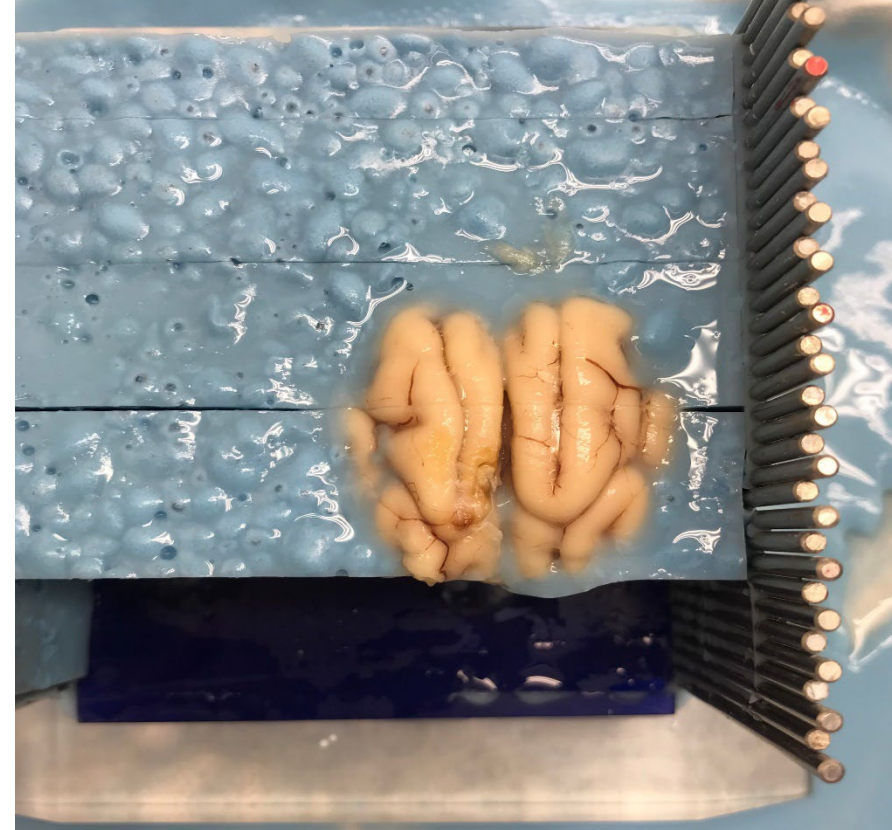
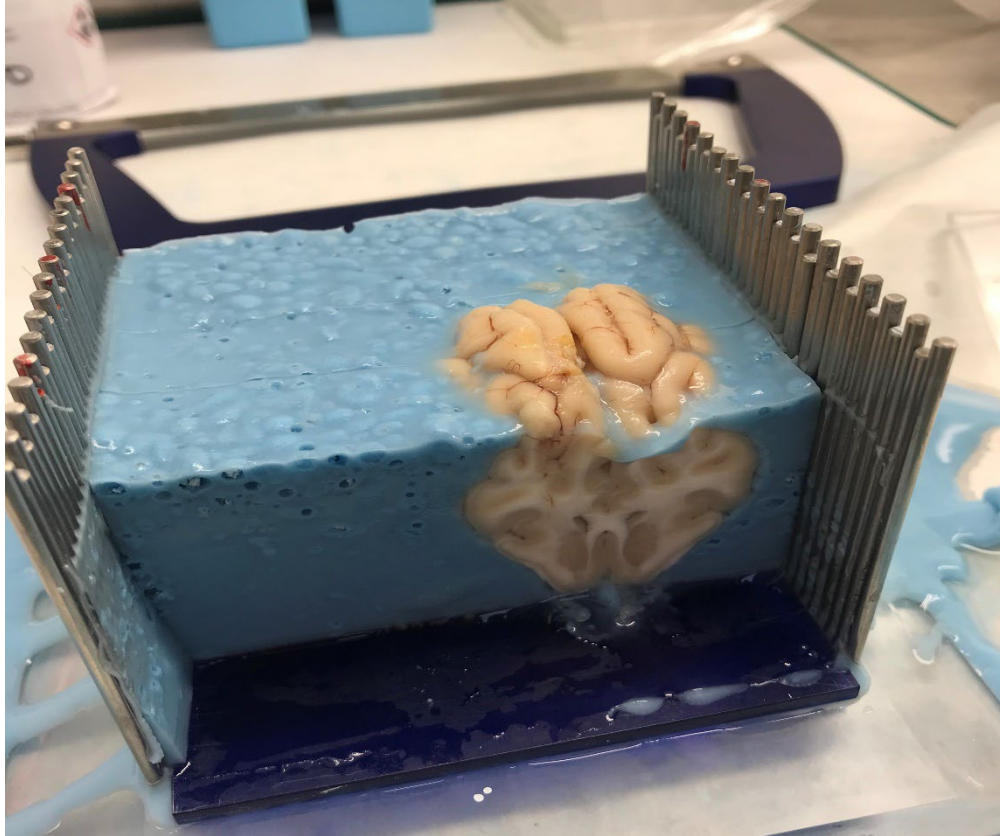


Foto: Trine Werenberg Mikkelsen

Dissektion



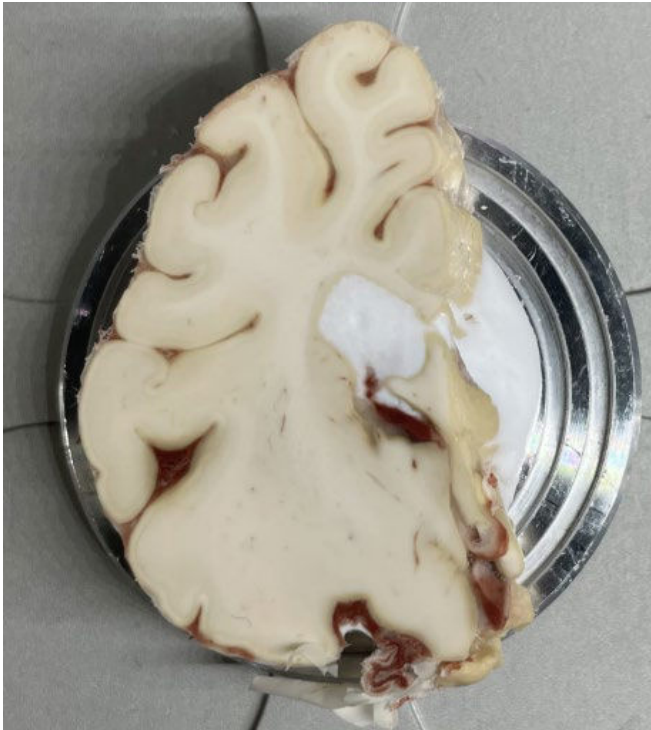
Foto: Trine Werenberg Mikkelsen

- Cryoprotection og Nedfrysning

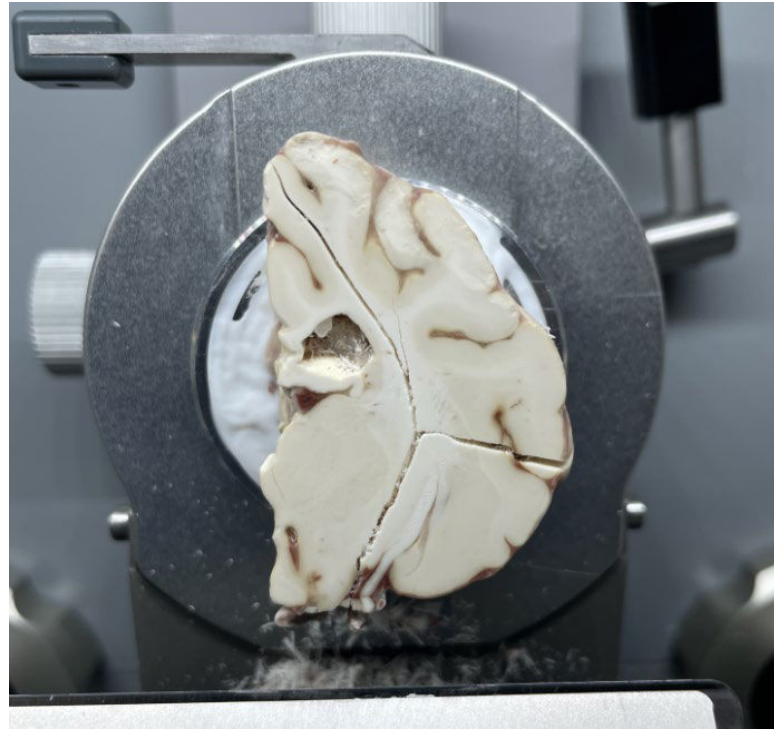


- Cryoprotection og Nedfrysning

30% sucrose i 7 døgn



Ingen sucrose



Ufikse ret (rotte)



Foto: Trine Werenberg Mikkelsen

- Cryoskæ ring

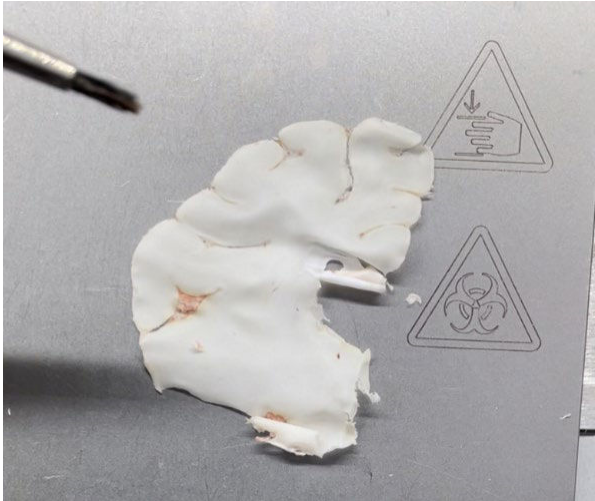
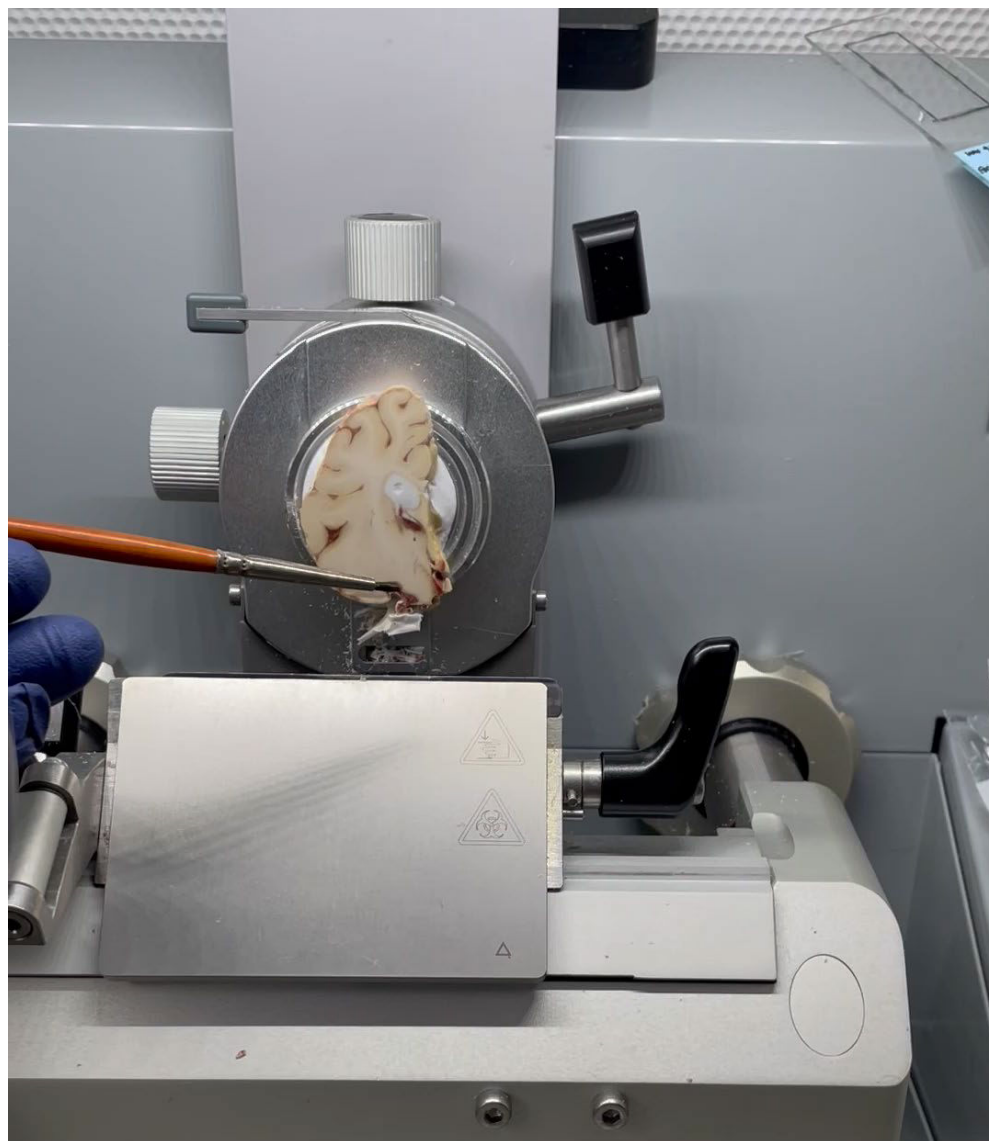
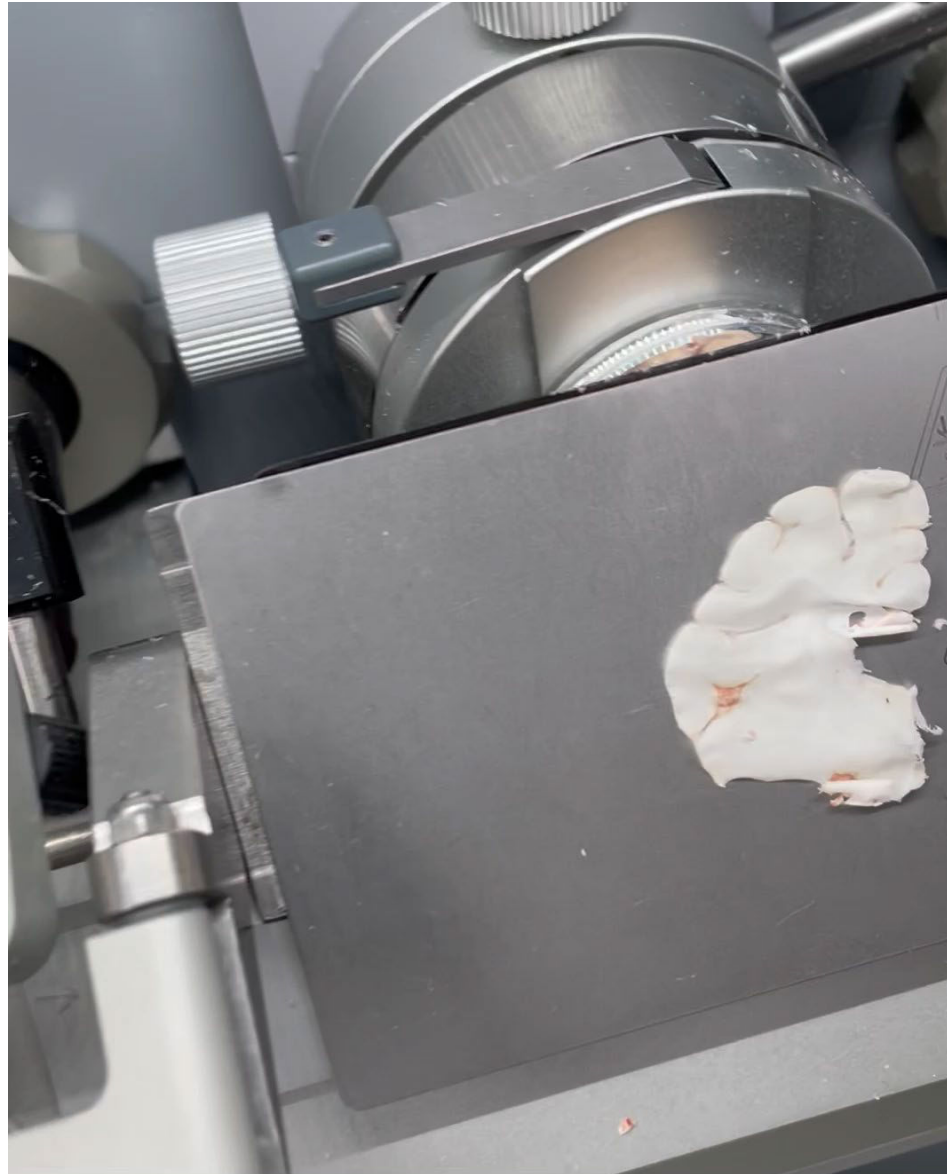


Foto: AUH Foto/ Tonny Foghmar

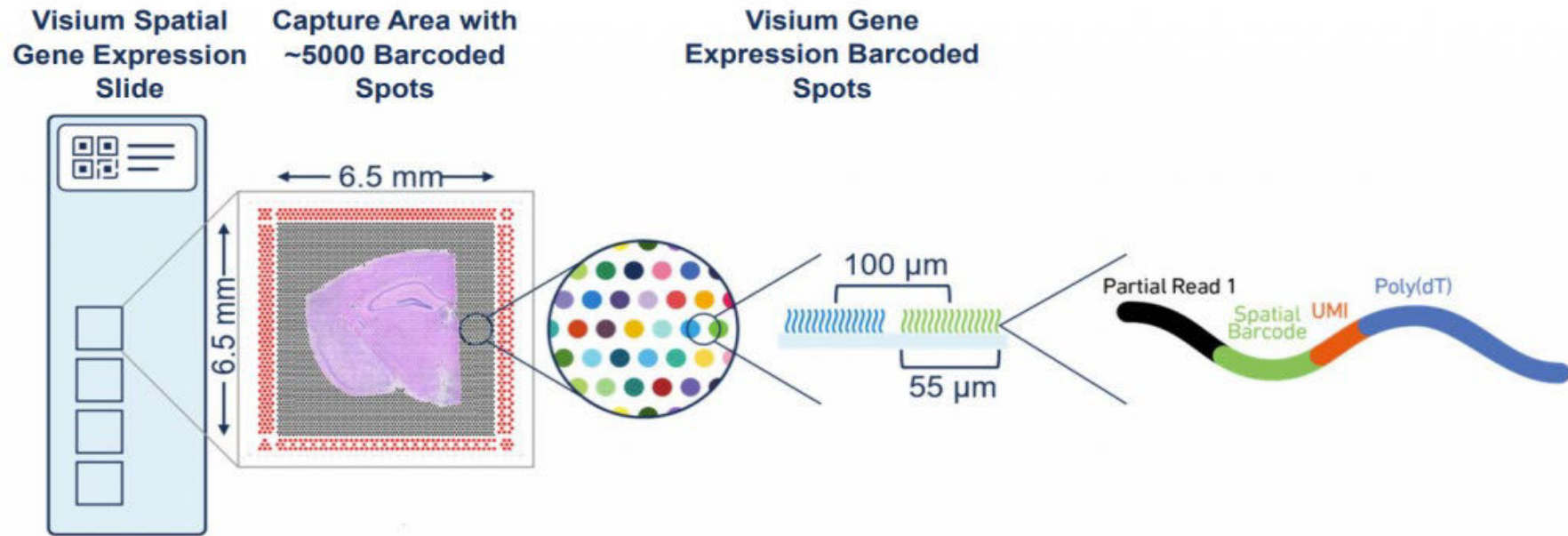
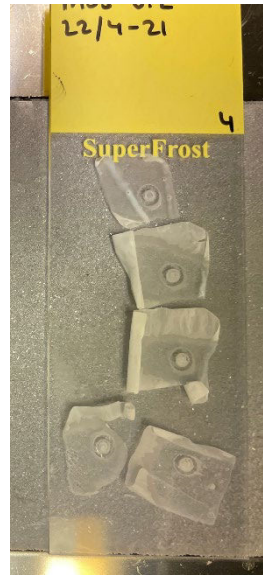


Foto: Trine Werenberg Mikkelsen





- Særlige udfordringer



UDVALGTE PROJEKTER

UDVIKLING AF ØJET I MUS

Baggrund

Musens nethinde udvikles i løbet af de første uger efter fødslen

Mål

Identificere spatio-temporale forskelle i genexpressionen i musenethinder

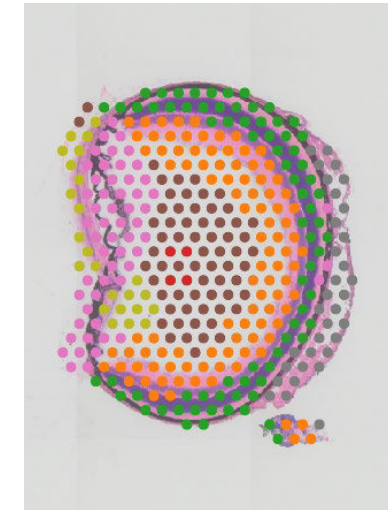
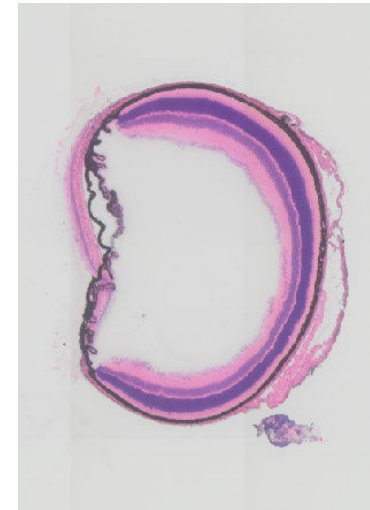
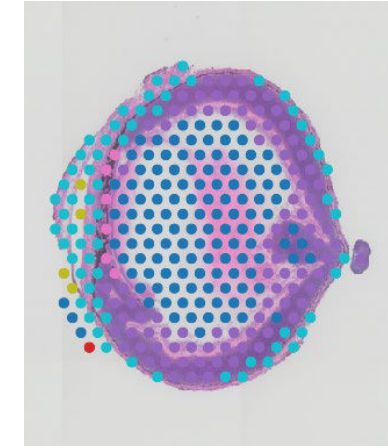
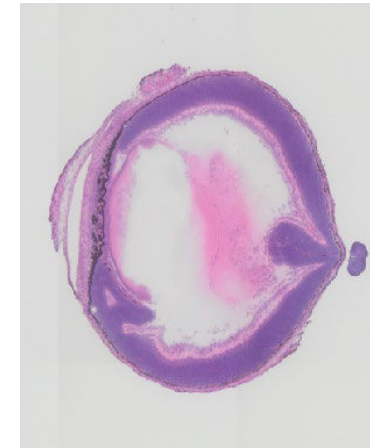


Foto: Christian Damsgaard, Aarhus Institute of Advanced Studies

EVOLUTION OF THE RODENT RETINA

Baggrund

Marsvin og hamstere mangler blodkar i nethinden

Mål

Identificere nethindens tilpasning i marsvin og hamstere, der muliggør fuld funktion af nethinden trods mangel på blodtilførsel

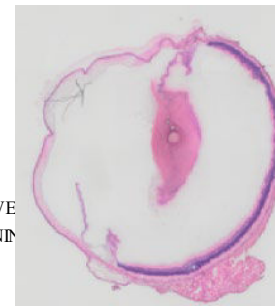
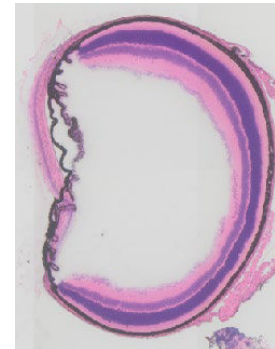
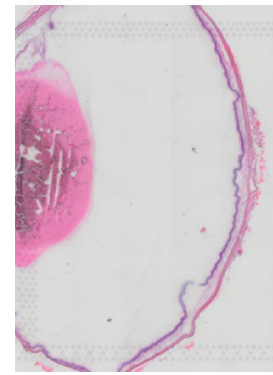


Foto: Christian Damsgaard, Aarhus Institute of Advanced Studies

ZEBRAFINKENS NETHINDE

Baggrund

Zebrafinker har en a vaskulær nethinde og en interessant vaskulær struktur inde i glasegemet.

Mål

Identificere genekspressionen i nethinden og undersøge funktionen af den vaskulære struktur i glasegemet.

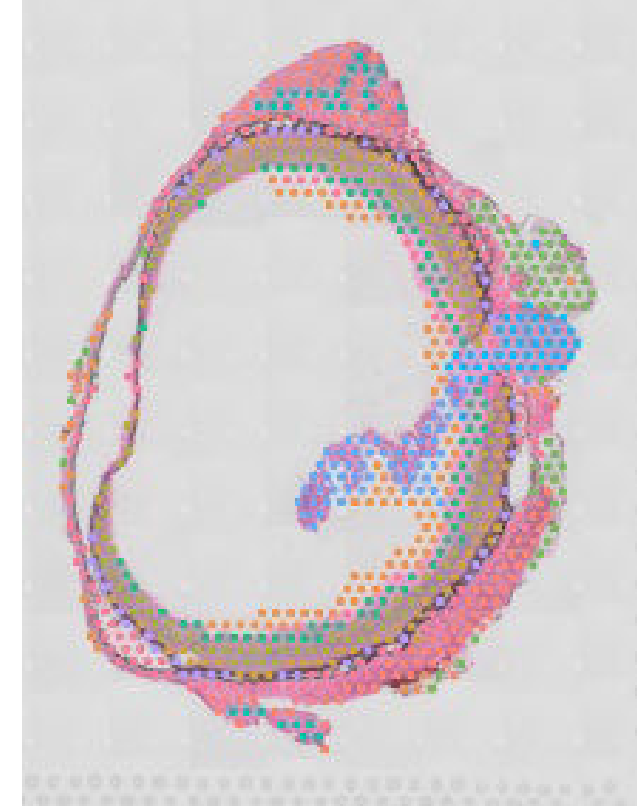


Foto: Christian Damsgaard, Aarhus Institute of Advanced Studies



ØJETS EVOLUTION FUGLE OG REPTILER

Mål

Klarlægge genekspressionen spatialt i øjne fra fugle og deres nærmest beslægtede hos reptilerne.

At forstå evolutionen af det skarpe syn på molekylært niveau.

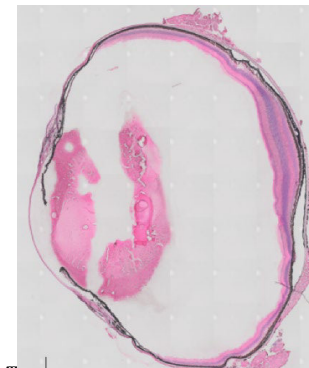
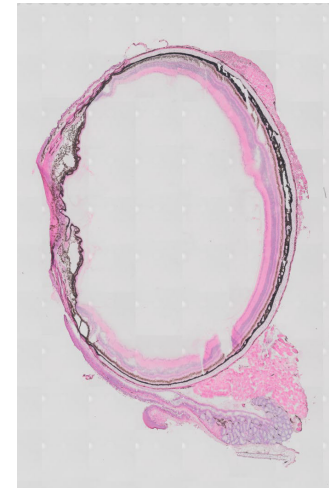


Foto: Christian Damsgaard, Aarhus Institute of Advanced Studies

SUMPSKILDPADDENS HJERNE

Baggrund

Sumpskildpadder tolererer iltmangel over længere tid.

Mål

Identificere geneskpressionen i forskellige regioner i hjerner fra dyr udsat for iltmangel.

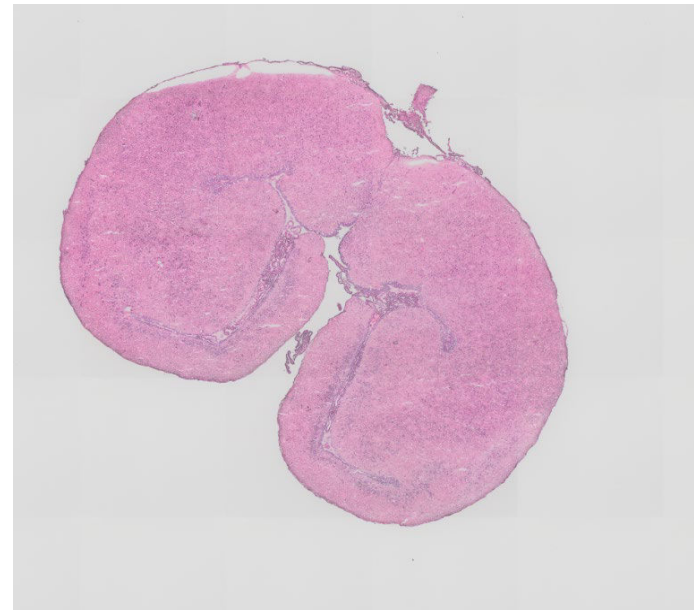
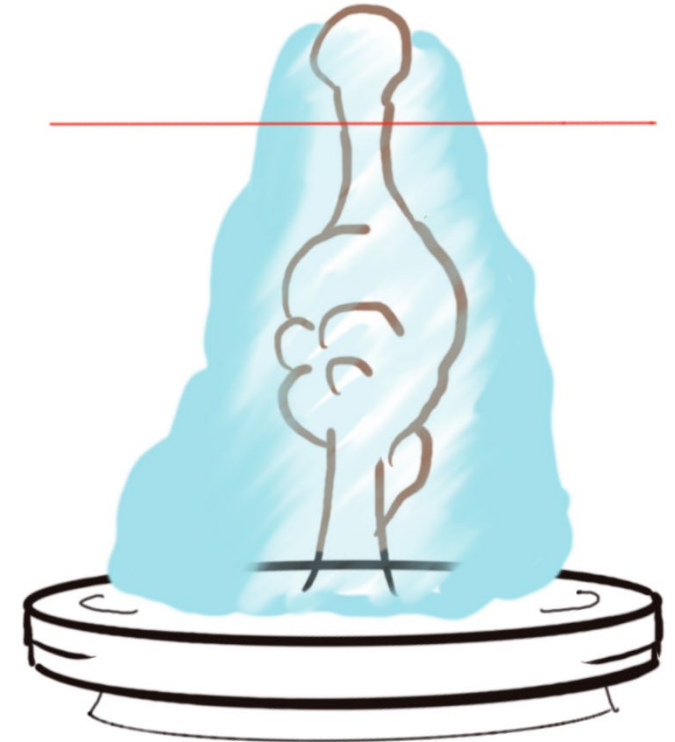


Foto: Christian Damsgaard, Aarhus Institute of Advanced Studies

- Særlige udfordringer



Foto: Catherine Williams, Institut for Biologi - Zoofysiologi



- Når det går galt



Foto: Trine Werenberg Mikkelsen

- Når det går galt

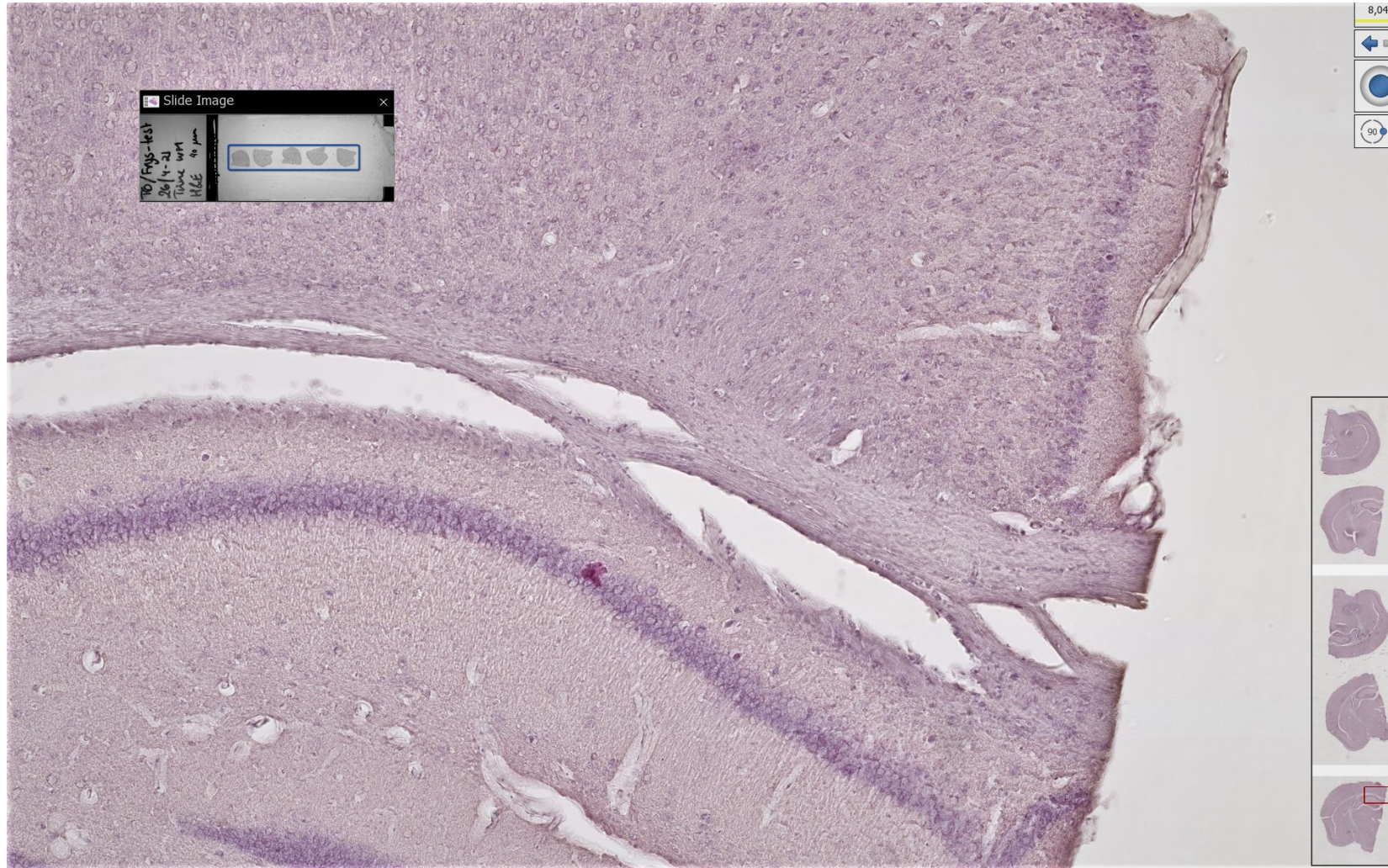


Foto: Trine Werenberg Mikkelsen

- Når det går galt

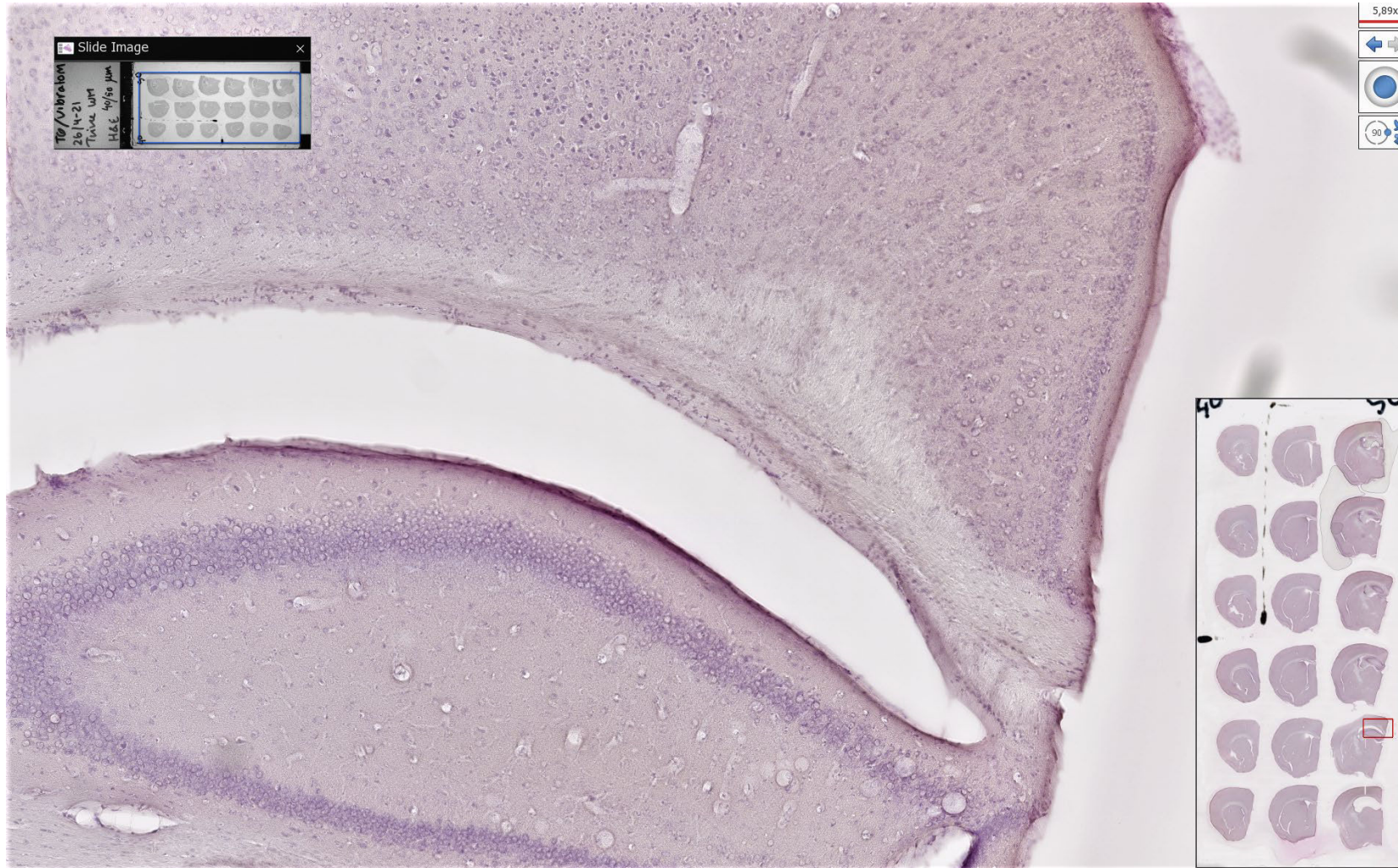


Foto: Trine Werenberg Mikkelsen

- Når det går (lidt) galt

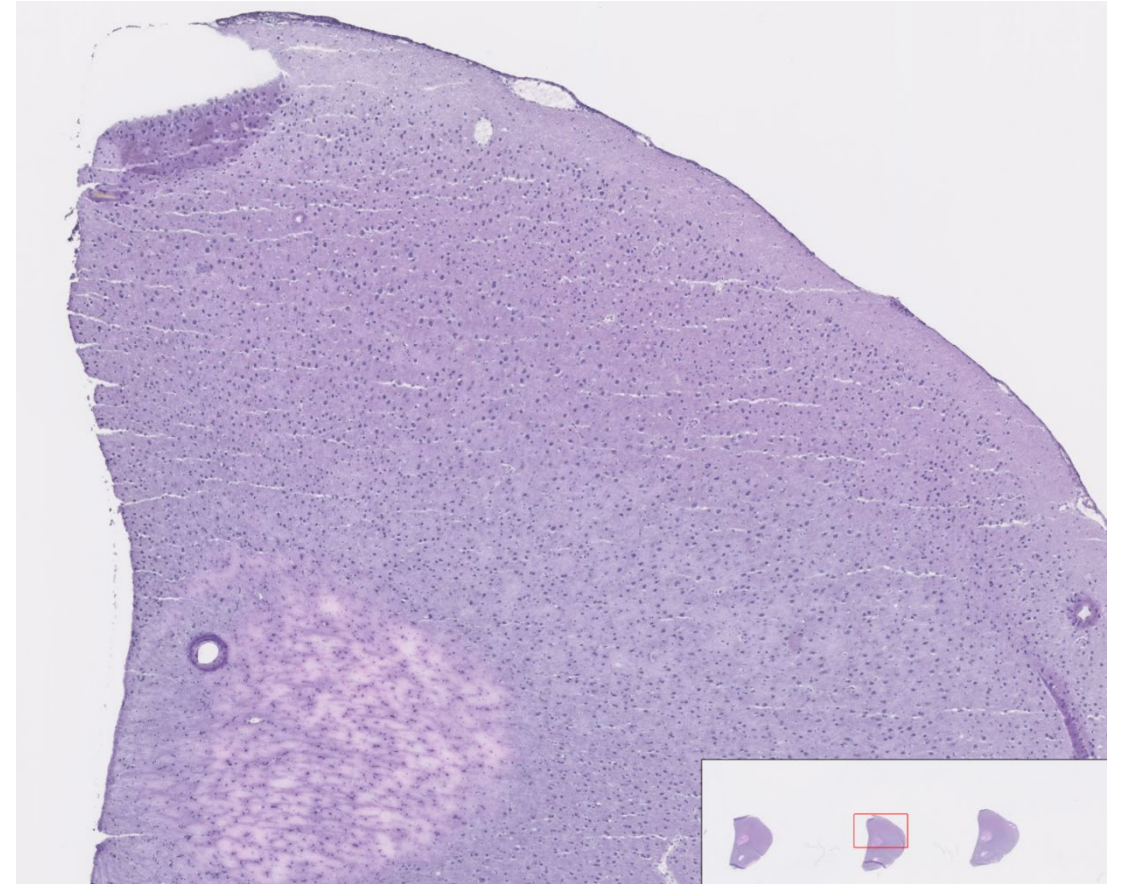
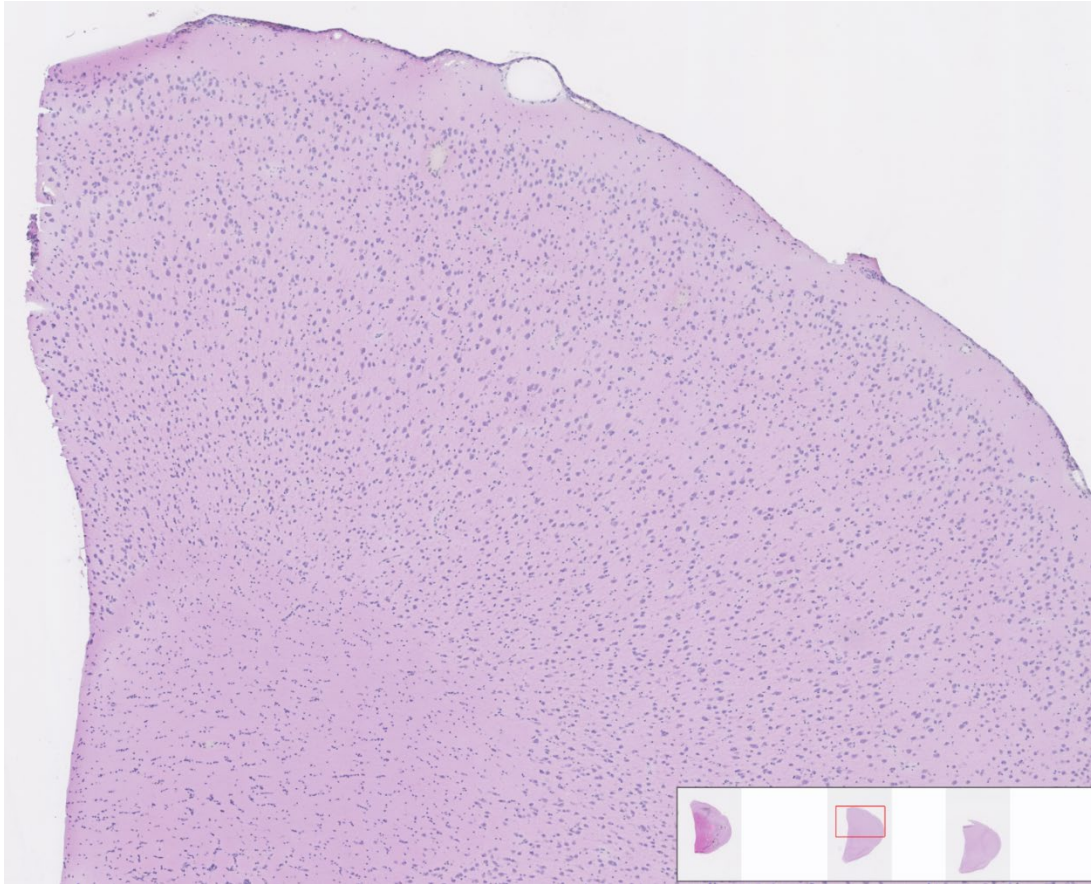


Foto: Trine Werenberg Mikkelsen

OPSUMMERING

- forberede væv til nedfrysning
- temperatur
- snittykkelse
- Meget kan lade sig gøre!

Kontaktoplysninger

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LITTERATUR OG RELEVANTE WEBSITES

Evolutionary Biology

Retinal oxygen supply shaped the functional evolution of the vertebrate eye

Christian Damsgaard , Henrik Lauridsen, Anette MD Funder, Jesper S Thomsen, Thomas Desvignes, Dane A Crossley II, Peter R Møller, Do TT Huong, Nguyen T Phuong [see all](#) »

Aarhus University, Denmark; University of British Columbia, Canada; Cornell University, United States; University of Oregon, United States; University of North Texas, United States; Natural History Museum of Denmark, University of Copenhagen, Denmark; Can Tho University, Viet Nam; Northeastern University, United States; University of Hamburg, Germany [see all](#) »

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- <https://clin.au.dk/>
- <https://3center.dk/forsoesdyr/hvilke-dyr-bruges-som-forsoesdyr/eksotiske-dyr-som-forsoesdyr#:~:text=Brugen%20af%20traditionelle%20fors%C3%B8gsdyr%20har,ofte%20en%20mere%20fyldestg%C3%B8rende%20fortolkning.>
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