Manuscript Title

This manuscript (permalink) was automatically generated from habi/InMiceMethodPaper@208b965 on October 30, 2025.

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✉ — Correspondence possible via GitHub Issues

Abstract

Background & Summary

We scanned a *lot* of different mouse strains and so-called hybrids, both male and female. One scan for each strain, each hybrid and each sex gives already 90 samples.

Methods

Sample preparation

- Mice were anesthesized
- Mice were decapitated
- Mouse skulls were stored in EMA
- Separated into 4 batches of approximately 110 animals, labeled as B`batch_number` *`animal number`* *A and B* *`batch_number`* `animal number` B.

Tomographic imaging

- SkyScan 1272 with sample changer
- *All* log files available here: https://github.unibe.ch/david-haberthuer/InMice/tree/main/logfiles
- Report scaning settings and reconstruction parameter data according to[1]
- Use a notebook to pull *all* the relevant data to report directly into the text here, or into a file that is loaded by `manubot`.

QA

- Use a collection of logfile wrangling code[2] to go through *all* the log files of all the aquired scans
  - Use this to surface issues related to aquisition (wrong setting) and reconstruction
- Look at average and maximal brightness of (a subset of) all the projection images aquired
  - Use this to surface issues related to acquisiton, e.g. sometimes the x-ray source inadvertedly shut down, or the counts were too low on the camera, etc.

Image processing

- *Jupyter*[3] notebooks, available here: https://github.unibe.ch/david-haberthuer/InMice/, for reproducible research.
  - Ingest complete, uncropped reconstructions with `dask`[4]/
  - Crop, based on axial MIPs
  - Save cropped data out as `.zarr`-files, ready to be loaded with `n5-ij`[5] in Fiji[6]
  - Save in other formats, to either use 3D Slicer[7]/,doidoi:10.1016/j.mri.2012.05.001? or Dragonfly[8]/

Data Records

Technical Validation

Usage Notes

Code Availability

- Jupyter notebooks

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Author Contributions

Contributor Roles Taxonomy (CRediT), as defined in[9]:

- Data curation: David Haberthür, Larisa Petra Kaija
- Formal analysis: David Haberthür
- Investigation: David Haberthür, Pui Ching Chu, Larisa Petra Kaija
- Methodology: David Haberthür, Pui Ching Chu, Larisa Petra Kaija
- Project administration: David Haberthür, Pui Ching Chu
- Resources: Pui Ching Chu
- Software: David Haberthür
- Validation: David Haberthür, Pui Ching Chu, Larisa Petra Kaija
- Visualization: David Haberthür
- Writing – original draft: David Haberthür
- Writing – review & editing: David Haberthür, Pui Ching Chu, Larisa Petra Kaija

Competing Interests

Author	Competing Interests	Last Reviewed
David Haberthür	None	2025-06-27
Pui Ching Chu	None	2025-06-27
Larisa Petra Kaija	None	

Acknowledgements

We are grateful to the Microscopy Imaging Center of the University of Bern for their infrastructural support. We also thank the `manubot` project[10] for facilitating collaborative writing of this manuscript.