



P-14

Case & Quality Reports 2025

Tomorrow.bio

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Introduction

A brain-only patient was received from a storage facility in Germany. The cryoprotection process began at the third-party storage facility where the brain was in a CPA-fixative mixture equivalent to approx. 30% w/v TB VM-1. The brain was then transported to Switzerland for cryoprotection and long-term storage at the European Biostasis Foundation. P-14 was assigned to this patient.

Procedure

An initial CT scan of the brain was performed. Based on the CT evaluation, the brain was then immersed in a 30% w/v cryoprotectant solution in the in-house immersion chamber at 4°C.

Subsequent CT scans were performed at regular intervals to monitor diffusion progress. Based on CT scan analysis, P-14's brain was progressively immersed in increasing cryoprotectant concentrations until the target concentration was achieved throughout all regions of the brain.

Once the target concentration was reached, P-14's brain was cooled to cryogenic temperatures and transferred to a long-term storage dewar.

Cryoprotection Data

Immersion Timeline

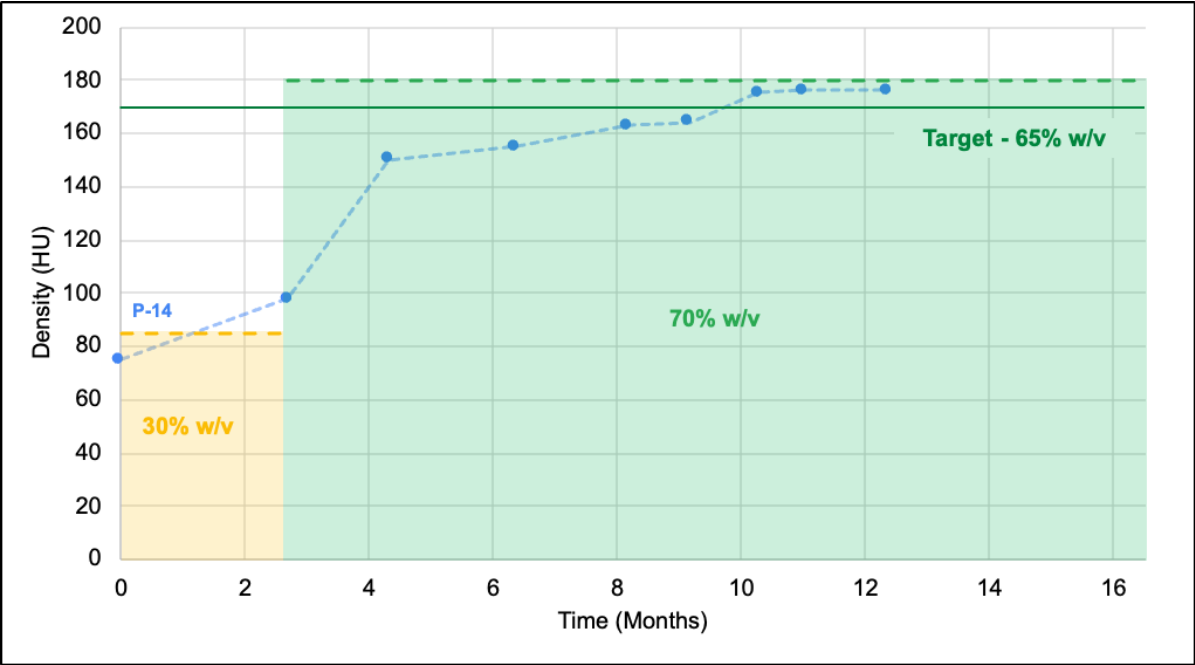


Figure 1. Diffusion timeline of patient with progressively higher CPA concentration.

Cooldown

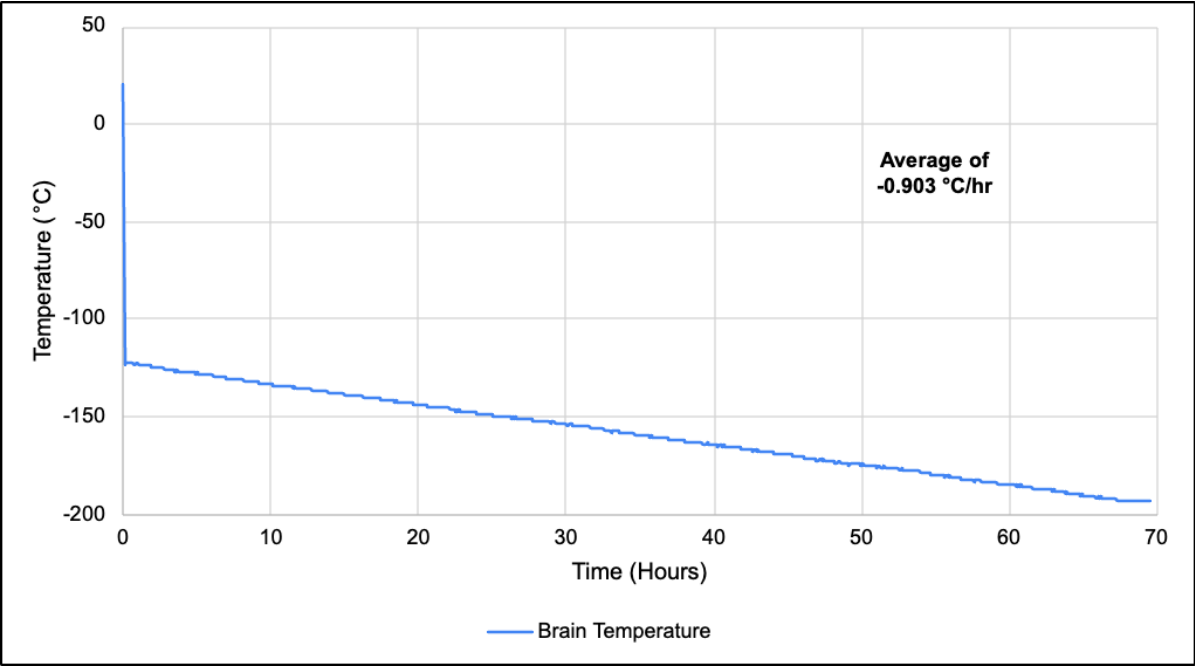


Figure 2. Patient cooldown to -196°C.

CT Scan Analysis

Overview

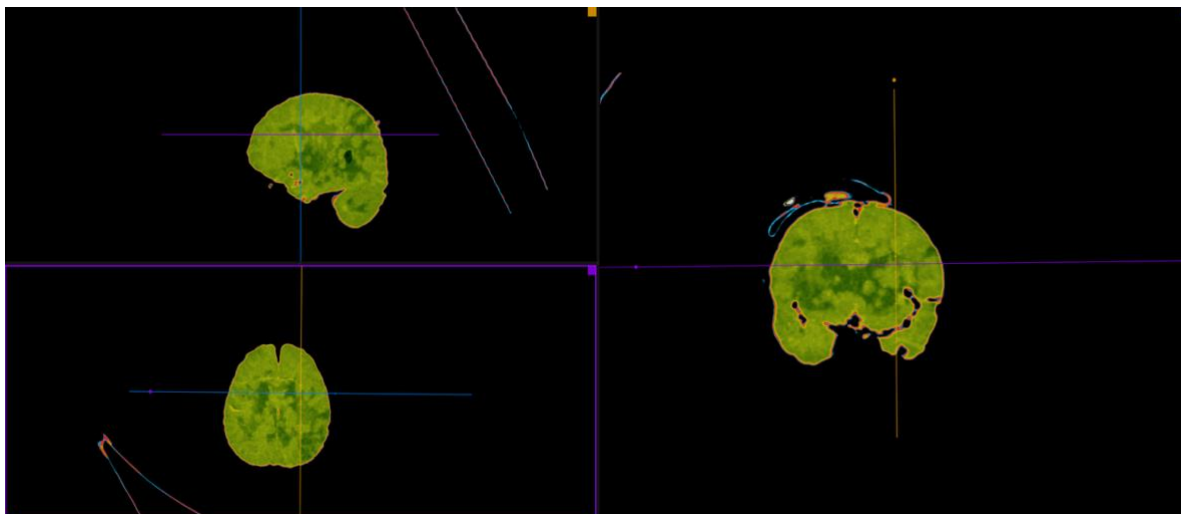


Figure 3. 3-panel projection (pseudo-color).

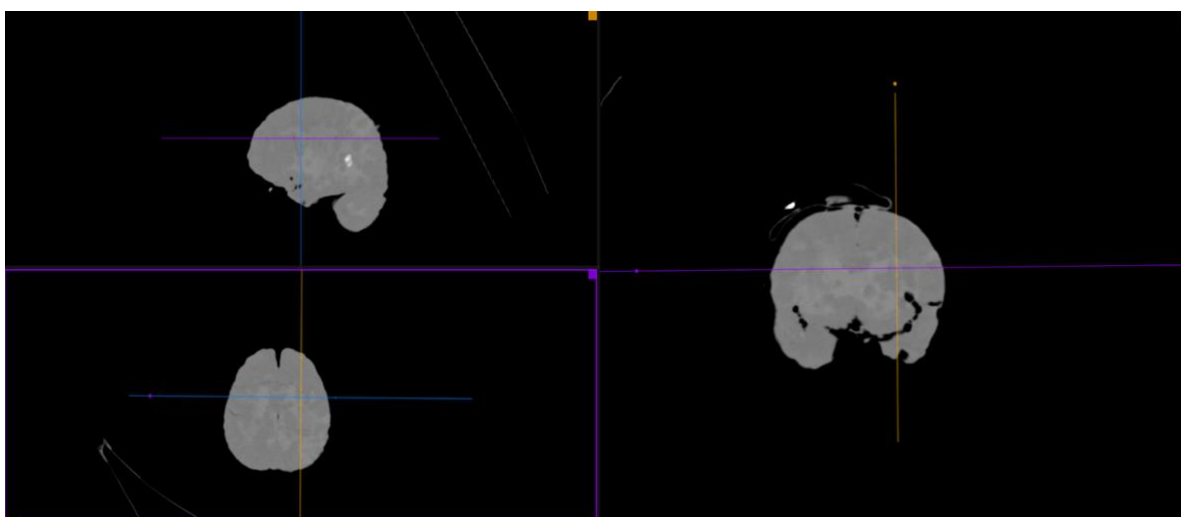


Figure 4. 3-panel projection (gray-scale).

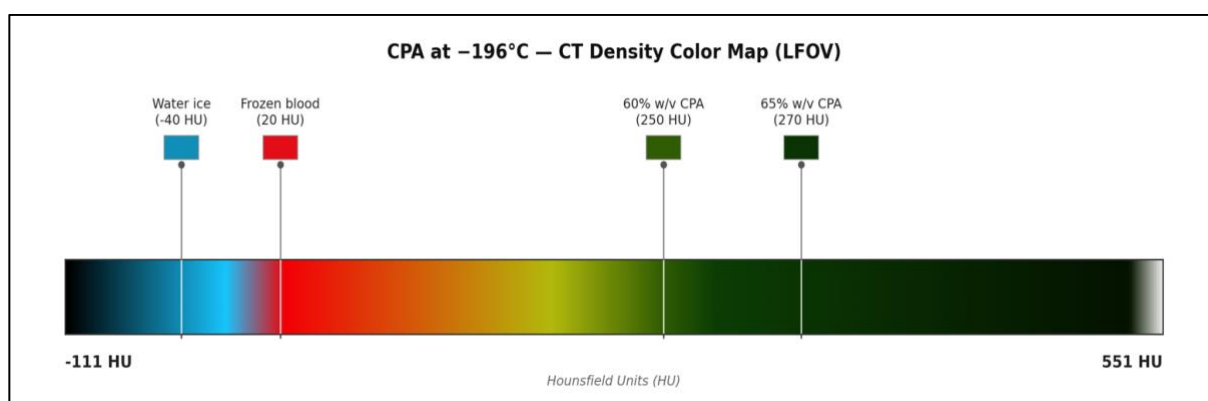


Figure 5. Color LUT.

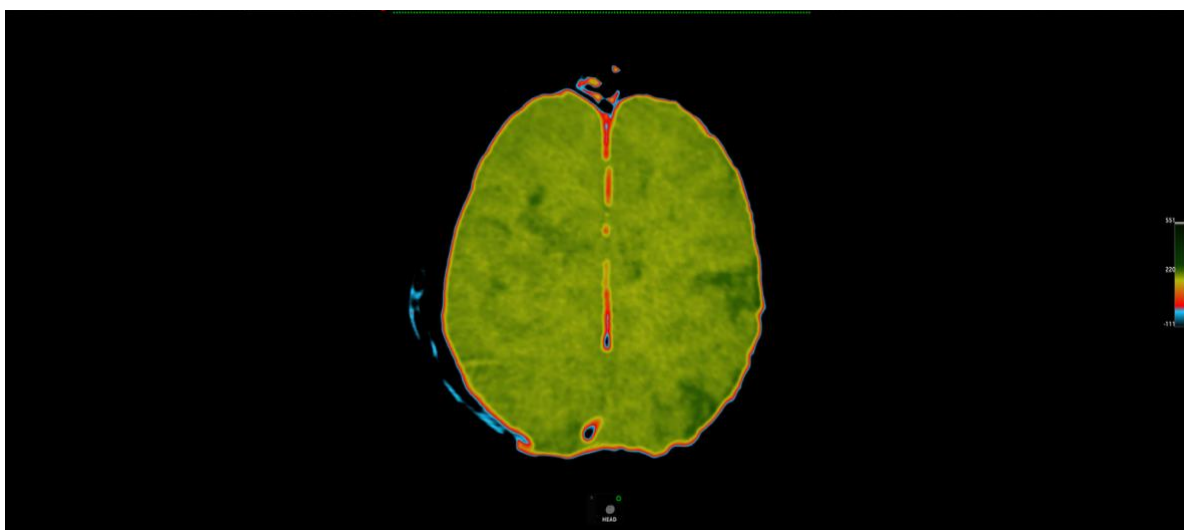


Figure 6. Axial plane CT slice 1.

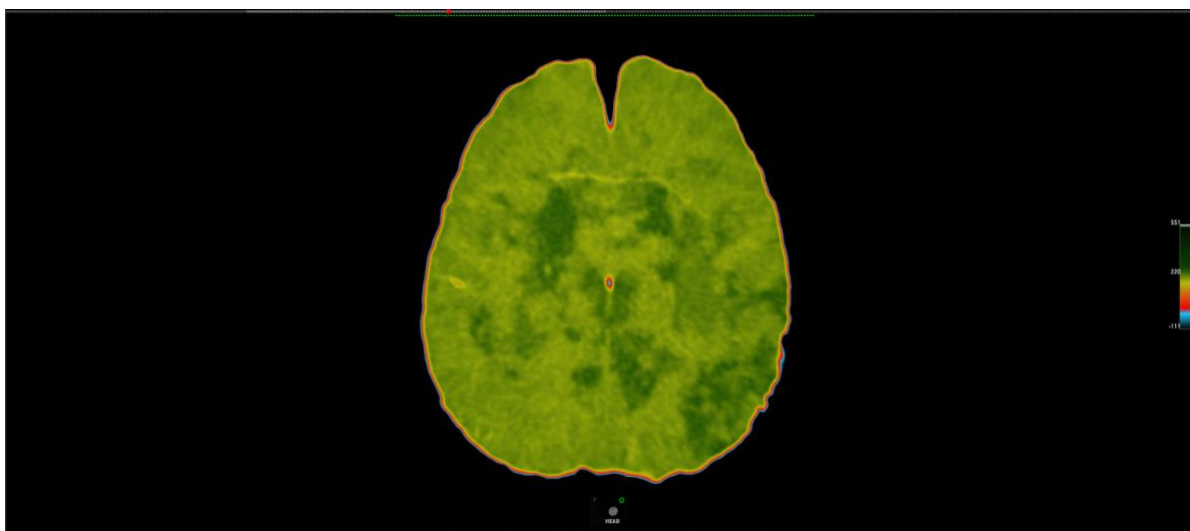


Figure 7. Axial plane CT slice 2.

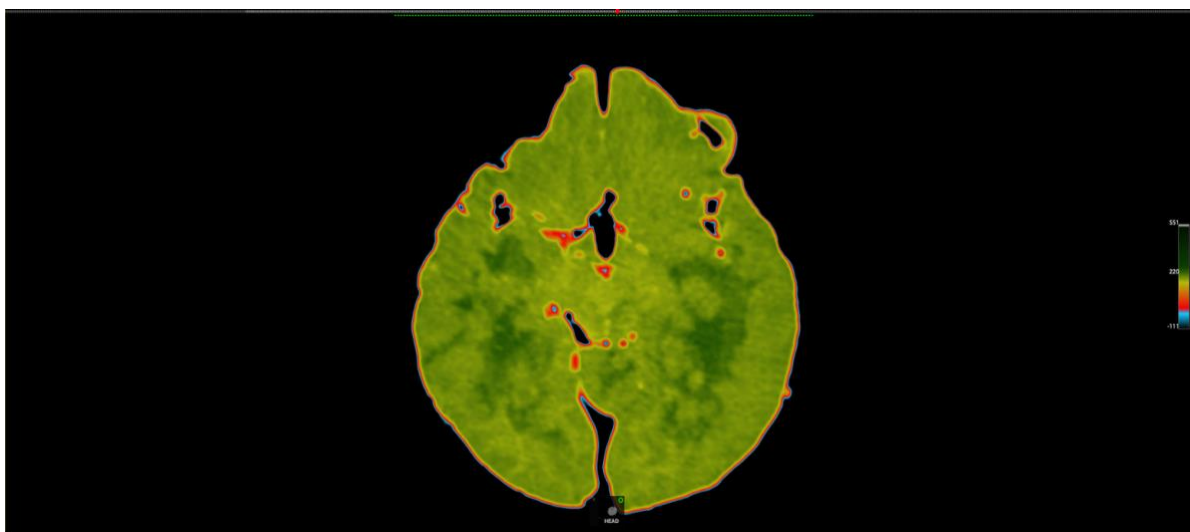


Figure 8. Axial plane CT slice 3.

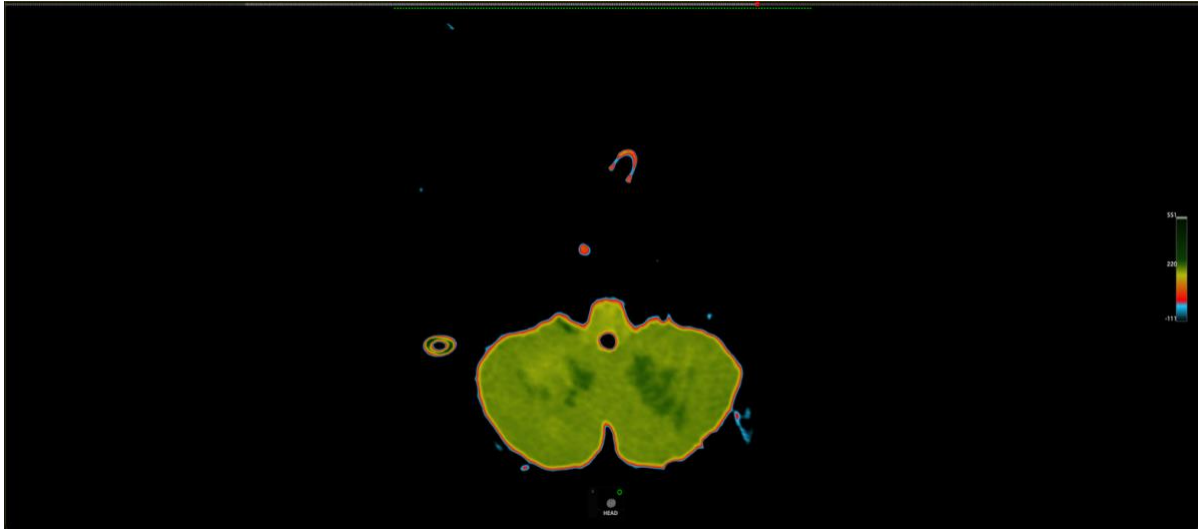


Figure 9. Axial plane CT slice 4.

Discussion of Results

After the patient's fixed brain was transferred to the European Biostasis Foundation, the immersion cryoprotection procedure was initiated and initial CT scans were performed. The immersion cryoprotection process took approximately 16 months to complete. During this period, 12 CT scans of the patient's brain were performed. Following the final CT scan, the brain was placed in a protective container labeled with the patient ID and transferred to a long-term storage dewar.