

Oligodendrocyte Dysfunction and Global CNS Dysmyelination Occur in Arginase Deficiency that is Prevented with AAV-based Hepatic Gene Therapy

Additional Information:

- Normal myelination of the pyramidal tract begins at Postnatal day (P)6 with little detection of myelination at P2; myelinated axon density increases markedly by P14. Myelination in the subcortical white matter begins around P10 and increases further, albeit at reduced density, by P14.
- Future directions including performing time course visualization and quantification of myelination. Arg1/PLP-eGFP expression and protein expression in Arg1 mice for markers indicated here, as well as other indicators of OL maturity, will be conducted for the three groups at time points P2, P6, P10, and P14. Additional quantification of myelination and OL genes will be done by RT-qPCR in Arg1 mice at comprehensive time course.

Supplemental Figures:

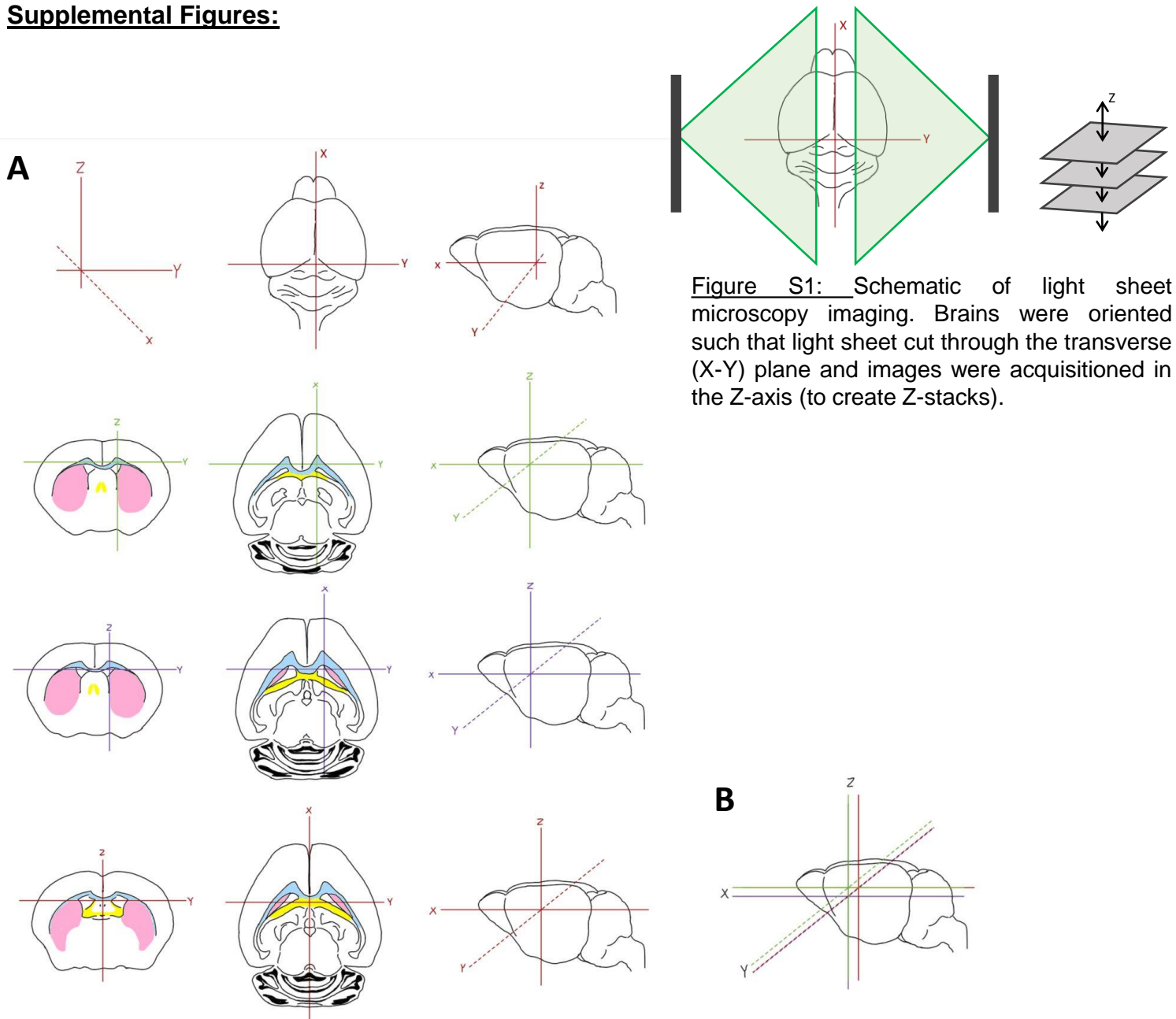


Figure S1: Schematic of light sheet microscopy imaging. Brains were oriented such that light sheet cut through the transverse (X-Y) plane and images were acquisitioned in the Z-axis (to create Z-stacks).

Figure S2: Orientation and structural reference for CLARITY-cleared light sheet imaged brains. Each row gives a different X-Y-Z spatial position within the brain; left column shows coronal section, middle column shows corresponding transverse plane, and right column gives sagittal view of brain with X-Y-Z axis that indicates the positioning of the sections in the corresponding row. Rows 1 and 2 show the same coronal section (same X position) with different transverse sections (different Z positions; row 1 is more dorsal to row 2). Rows 2 and 3 show the same transverse section (same Z position) with different coronal sections (row 2 is rostral to row 3). In all sections, blue highlighted structure corresponds to corpus callosum; yellow highlighted structure corresponds to the fimbriae; pink highlighted structure corresponds to the caudoputamen. Pannel B shows the overlapping axes of each row.