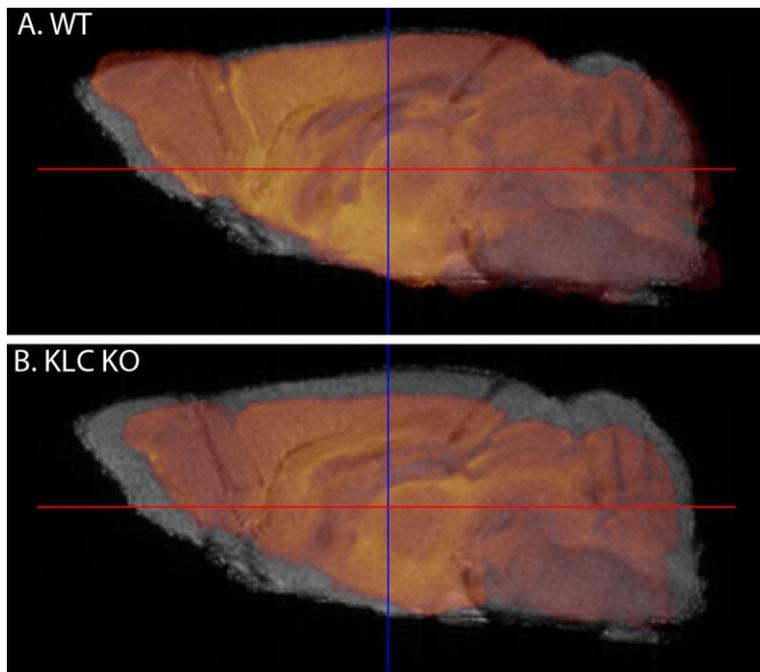


Hippocampal to basal forebrain transport of Mn²⁺ is impaired by deletion of KLC1, a subunit of the conventional kinesin microtubule-based motor

Medina, Biris, Falzone, Zhang, Zimmerman and Bearer

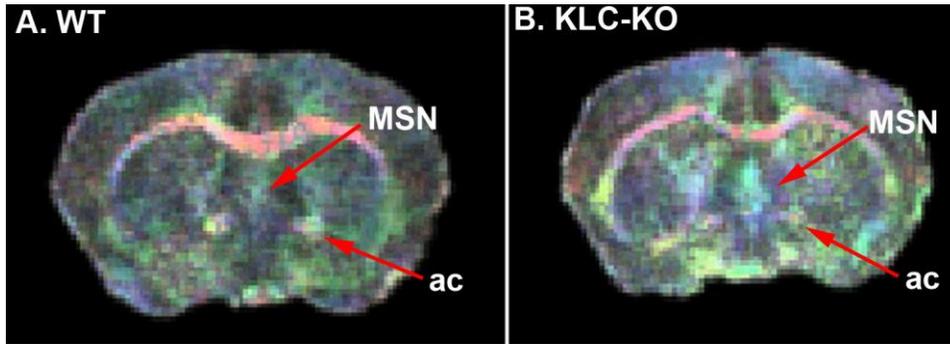
Supplemental Data

Supplemental Figure S1: Size comparisons.



Diffusion tensor images after rigid body alignment (orange) of the two older mice shown in **Figure 8**, projected onto a wildtype mouse template (grayscale). Note that both of these older mice (13 mo) are somewhat smaller than the normal mouse brain, and that the KLC-KO, is even smaller than its wildtype littermate. Crosshairs in red and blue indicate two of the three axis of rotation.

Supplemental Figure S2: Comparison of fractional anisotropy color-coded images through the anatomical area with differences in T-maps between genotypes.



The FA map was used to control the saturation of each color in the three directions: blue, dorsal-ventral, red, left-right, and green, anterior posterior, in each voxel (**Figure 8**). Note the increased blue saturation in the MSN of the KLC-KO compared to wildtype, indicating increased FA in the dorsal-ventral direction and consistent with the T-map difference between the two genotypes at 25 hours after Mn^{2+} injection. Also note decreased color in the anterior commissure (ac) indicating less consistent orientation of fiber tracts, or possibly a consequence of the decreased width of the commissure, also visible in these images and measured in **Figure 9** histologic sections. Images were not resized—the difference is also apparent here.

Supplemental Video S1: Three dimensional projections of two within-genotype T-maps comparing 6 hours greater than 30 min (yellow, KLC-KO, and red, WT) onto the Pre-injection Atlas, as shown in **Figure 6A**, and rendered in three dimensions in video format. By projecting both maps onto the same gray-scale image, the anatomy of the time-dependent intensity changes for each genotype can be directly compared. This dual projection is for anatomy and should not be mistaken for a statistical comparison of transport between the genotypes, which is better demonstrated by the ROI analysis shown in **Figure 5**.

Supplemental Video S2: Three dimensional projections of two T-maps comparing 25 hour greater than 30 min (25 hr > 30 min) for each genotype (yellow, KLC-KO, and red, WT) onto the Pre-injection Atlas (gray-scale), as shown in **Figure 6B**. This projection is to enable comparison of the anatomical position of the signal and does not represent between-genotype statistics.

Supplemental Video S3: Coronal sections in a video stack of the rendered color-coded DTI for the wild-type mouse shown in **Figure 8A and B**, and in **Supplemental Figure S2 A**.

Supplemental Video S4: Coronal sections in a video stack of the rendered color-coded DTI for the KLC-KO mouse shown in **Figure 8C and D**, and in **Supplemental Figure S2 B**.