**Supplementary Figure 1.**

**C:\Users\MADHUM~1.NM\AppData\Local\Temp\Rar$DR75.976\mals-2019-0044-20190514203657\graphic\Supp.Fig.1_mri setup.tif**

**Supplementary Fig.1** - *Mouse brain MRI scanning setup*.  **a -** Mouse brains were stacked in a 10 mm NMR tube**. b** - Diffusion scans showing a sagittal section of three brains per set. **c-** Simultaneous batch scan of three sets in a 25 mm coil at 17.6 T. Note the two additional tubes (5 mm NMR tube with Dodecane and 1 mm tube with water) used as diffusion controls and spatial position references. U, upper; M middle; L, lower. Scale bars = 5mm.