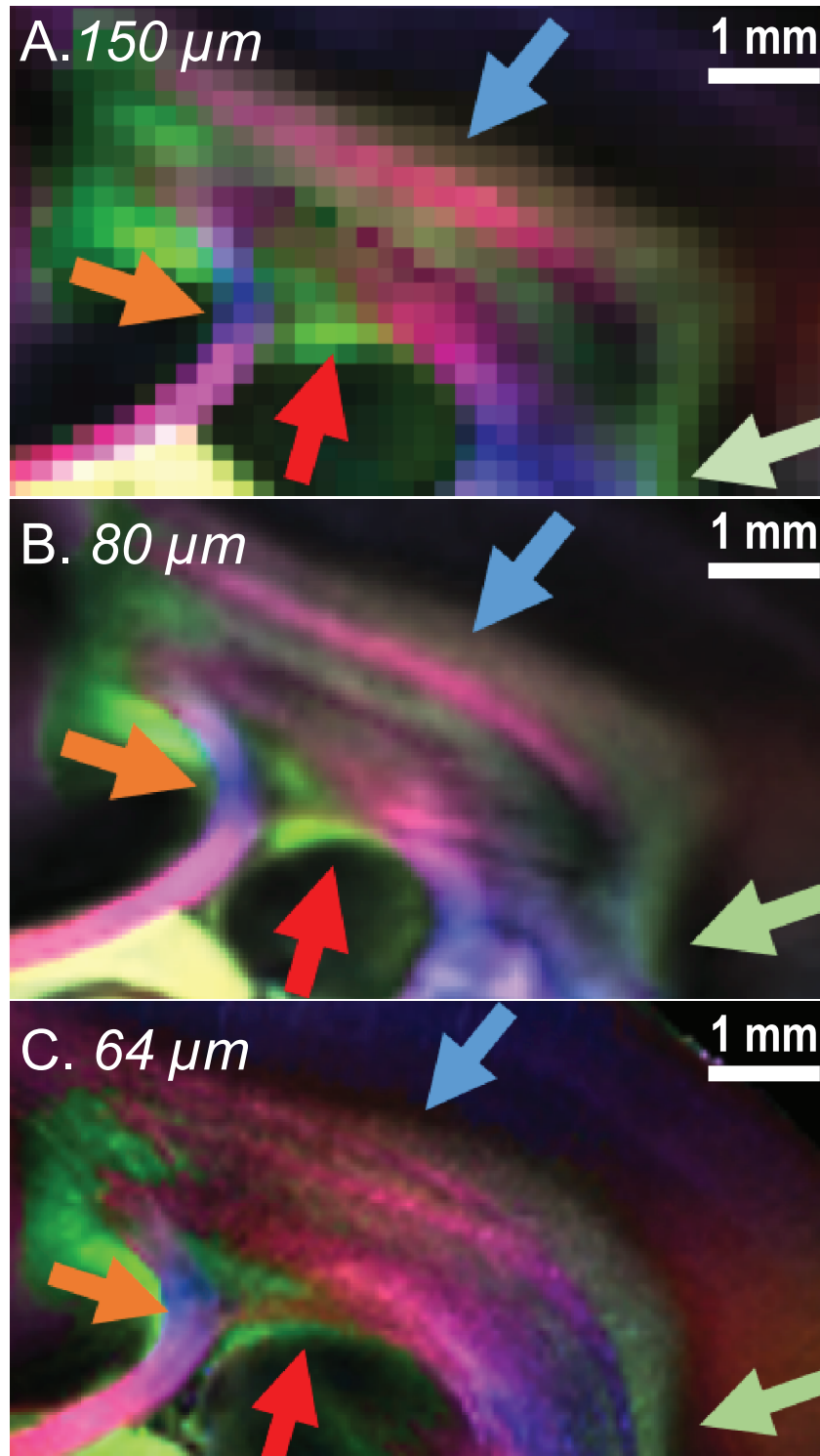


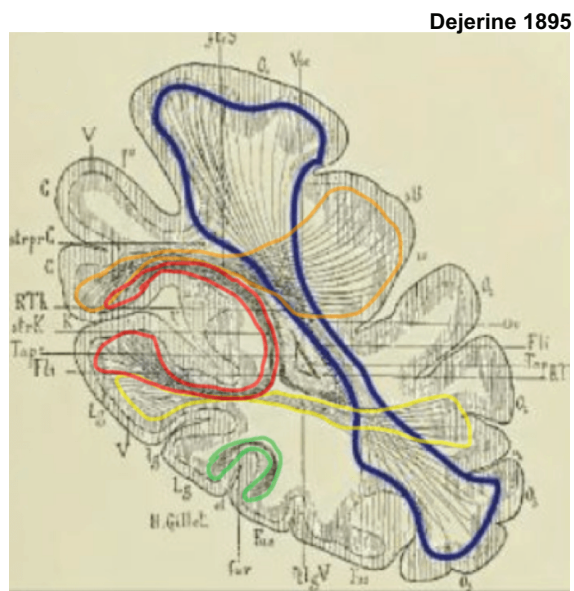
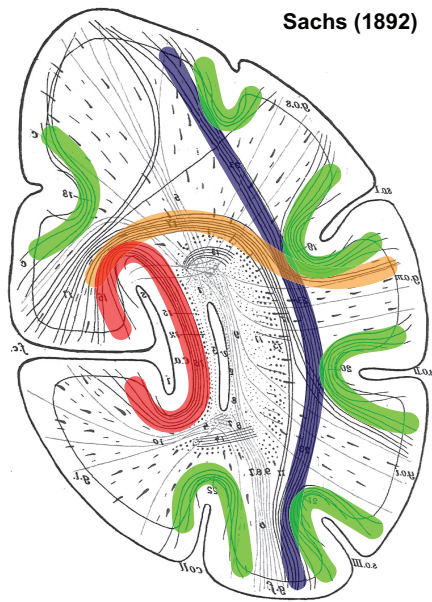
## NNRS67922D Supplementary Figures

### The corona radiata in marmoset data

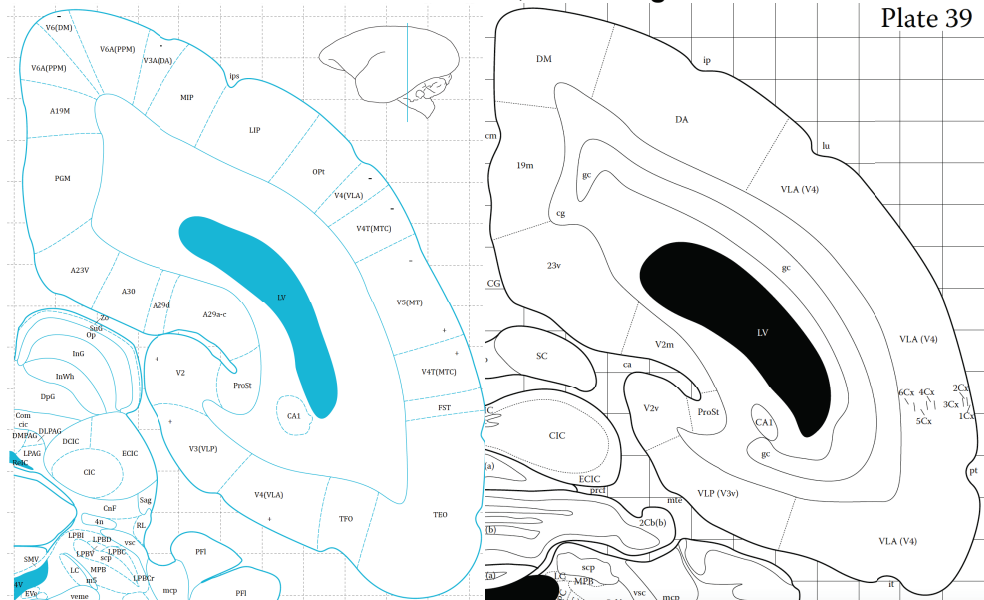


**Supplementary Figure 1. The corona radiata imaged at different spatial resolutions (zoom-in views).** Color map shows fiber orientations, where red means that the fibers are running in a left-right direction, blue in an inferior-superior direction and green in an anterior-posterior direction.

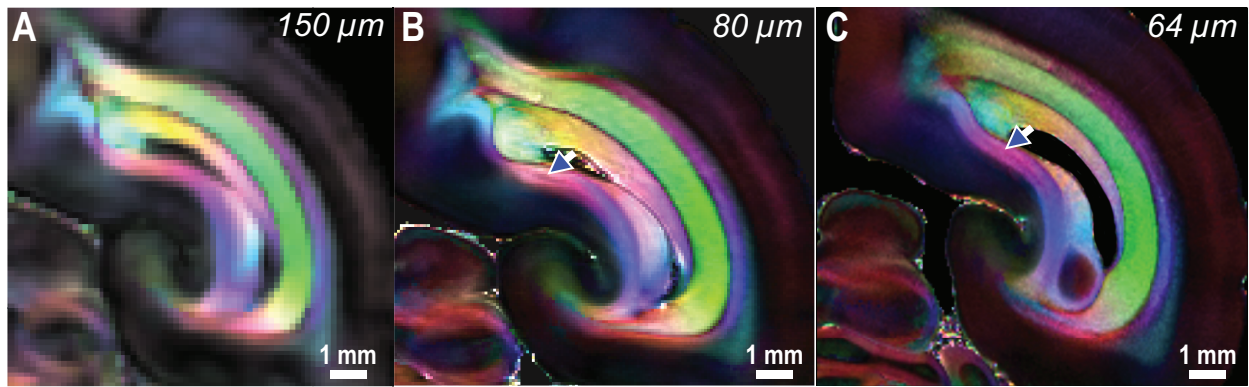
## A. Local fibers of the occipital lobe in humans



## B. Not described in modern atlases, including marmosets



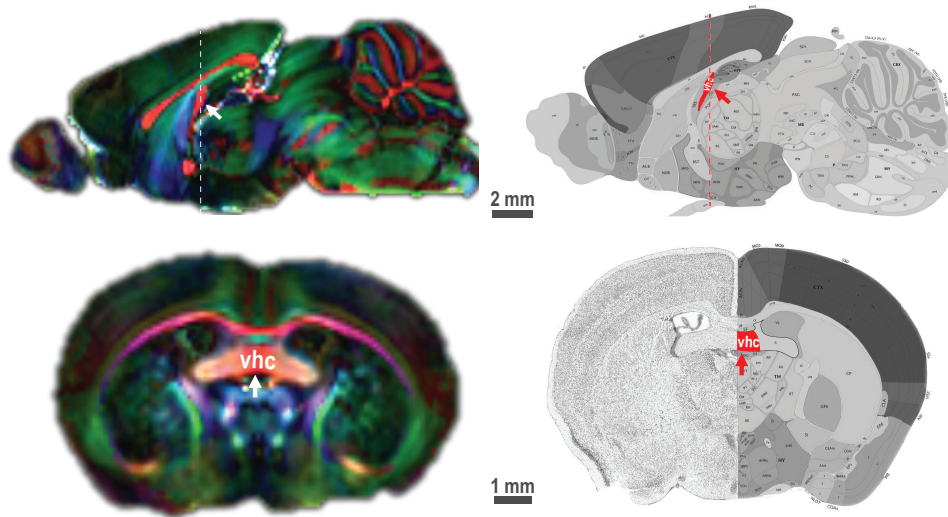
**Supplementary Figure 2. Local white-matter fibers of the occipital lobe.** (A) More than a century ago, early neuroanatomists depicted white matter structures in the occipital lobe in high detail by gross dissection approaches. Local fibers are highlighted by different colors. Green: *stratum proprium* (local U fibers) of different sulci; Red: *stratum calcarinum*; Blue: *occipital vertical fasciculus*; Orange and yellow: *occipital transverse fasciculus*. (B) In modern histological atlases of primate brains, including marmosets, these local white-matter fiber pathways have been ignored. Examples are shown from two most commonly used histological marmoset atlases, the Paxinos atlas<sup>1</sup> and the Hardman atlas<sup>2</sup> (modified with permission from the original authors).



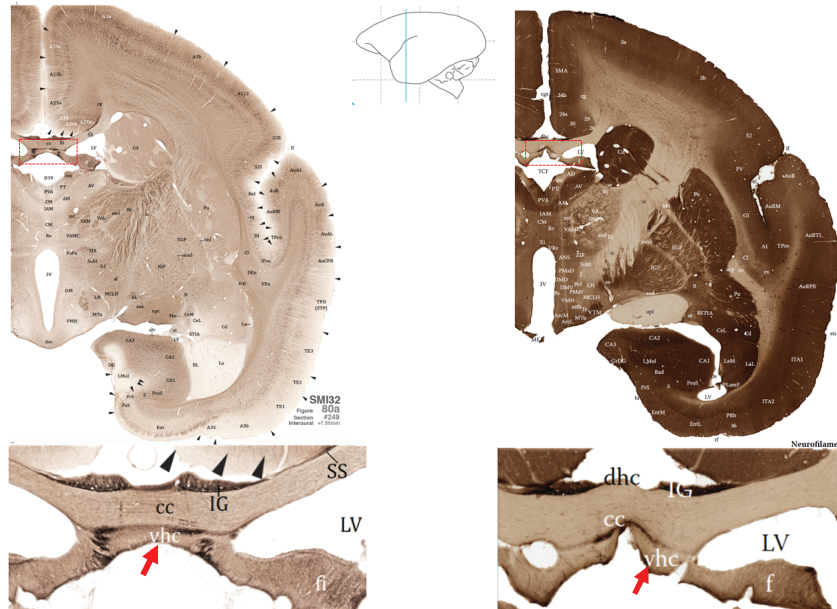
**Supplementary Figure 3. The boundary between the cingulum (cg) and the stratum calcarinum**

**(strk)**. The boundary is visible in 80 $\mu$ m and 64 $\mu$ m data, but not 150 $\mu$ m, indicated by white arrows. Color map shows fiber orientations, where red means that the fibers are running in a left-right direction, blue in an inferior-superior direction and green in an anterior-posterior direction.

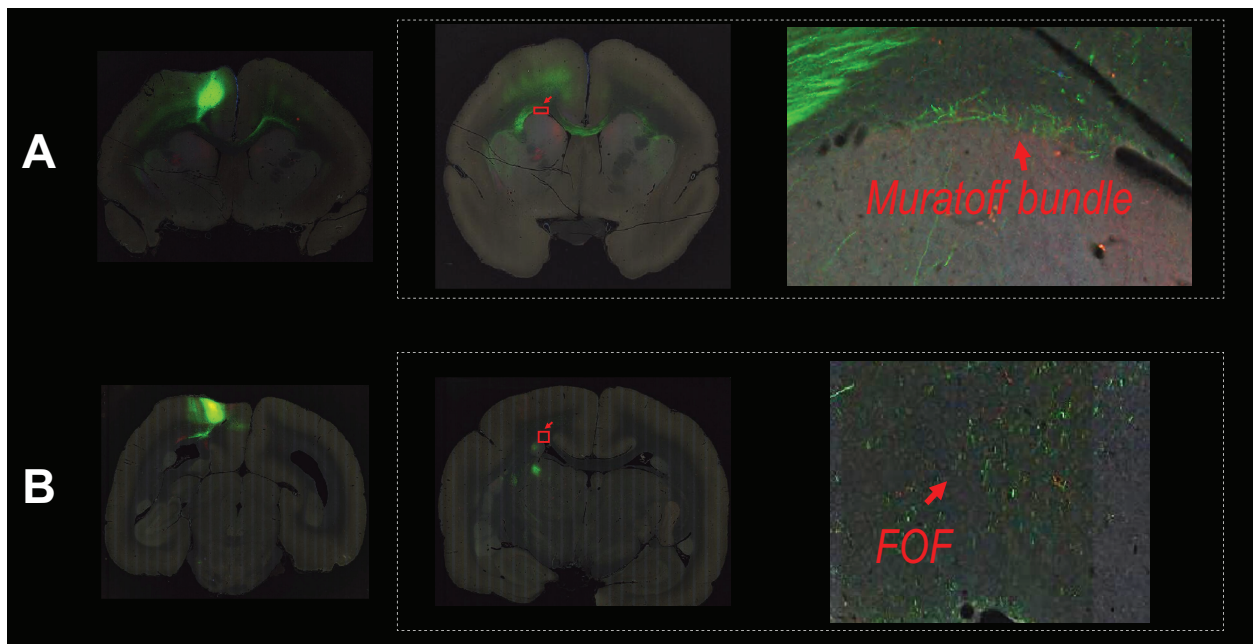
## A. vhc in the mouse atlas and brain



## B. vhc in most primate atlases, for example marmosets



**Supplementary Figure 4. The ventral hippocampal commissure in the mouse and in previous marmoset atlases.** (A) Left: FA-weighted DEC images (top: sagittal; bottom: coronal) of a mouse brain acquired at 100 $\mu$ m. The vhc is highlighted by the white arrows. Right: The Allen Mouse Brain Atlas (source: <http://mouse.brain-map.org/>; Image credit: Allen Institute), in which the ventral Hippocampal Commissure (vhc) is highlighted in red. (B) Coronal slices from two classic marmoset histology-based atlases. The left is from the Paxinos atlas<sup>1</sup> with SMI32 staining and the right is the neurofilament stained image from the Hardman atlas<sup>2</sup>, where the vhc is highlighted by red arrows (modified with permission from the original authors). The middle schematic diagram shows the location of the coronal slices.



**Supplementary Figure 5. The Muratoff bundle and FOF in tracing data.** (A) Tracing maps of an anterograde AAV-GFP injection in A6M (case 917) reveals the Muratoff bundle from the Riken Marmoset Brain Architecture Project (<http://riken.marmoset.braincircuits.org/>)<sup>3</sup>. (B) An injection in area PE (case 1148) reveals the FOF. The left column shows a coronal image of the injection site, and the remaining two columns show a coronal image (middle) and zoomed-in image (right) of where are the fibers of interests.

#### References for Supplementary Information

1. Paxinos, G., Watson, C., Petrides, M., Rosa, M. & Tokuno, H. *The marmoset brain in stereotaxic coordinates* (Elsevier Academic Press, 2012).
2. Hardman, C.D. & Ashwell, K.W. *Stereotaxic and chemoarchitectural atlas of the brain of the common marmoset (*Callithrix jacchus*)* (CRC Press, 2012).
3. Lin, M.K., *et al.* A high-throughput neurohistological pipeline for brain-wide mesoscale connectivity mapping of the common marmoset. *Elife* **8** (2019).