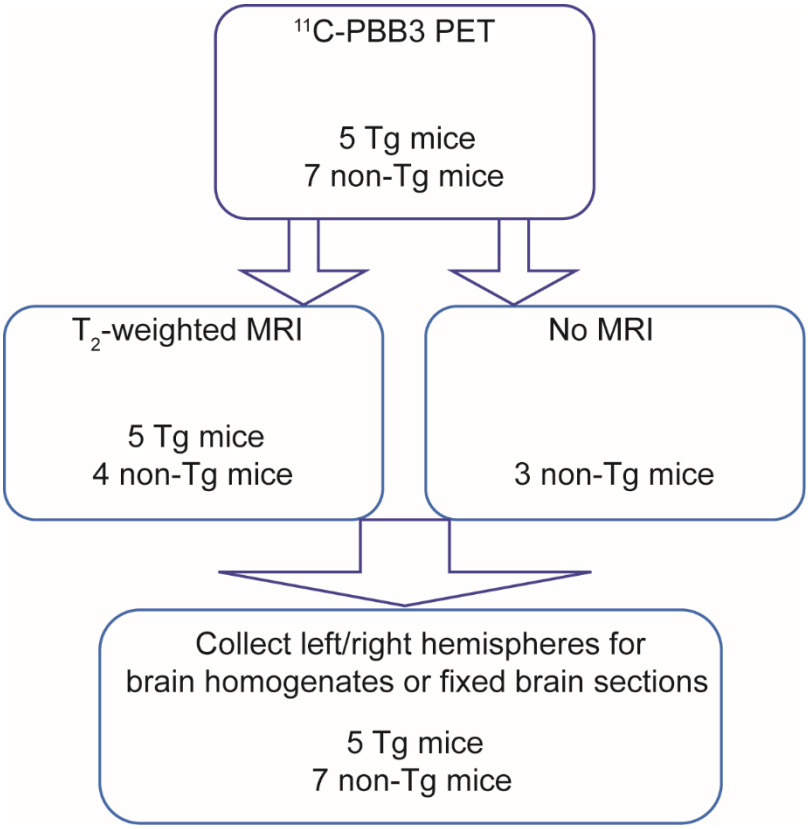
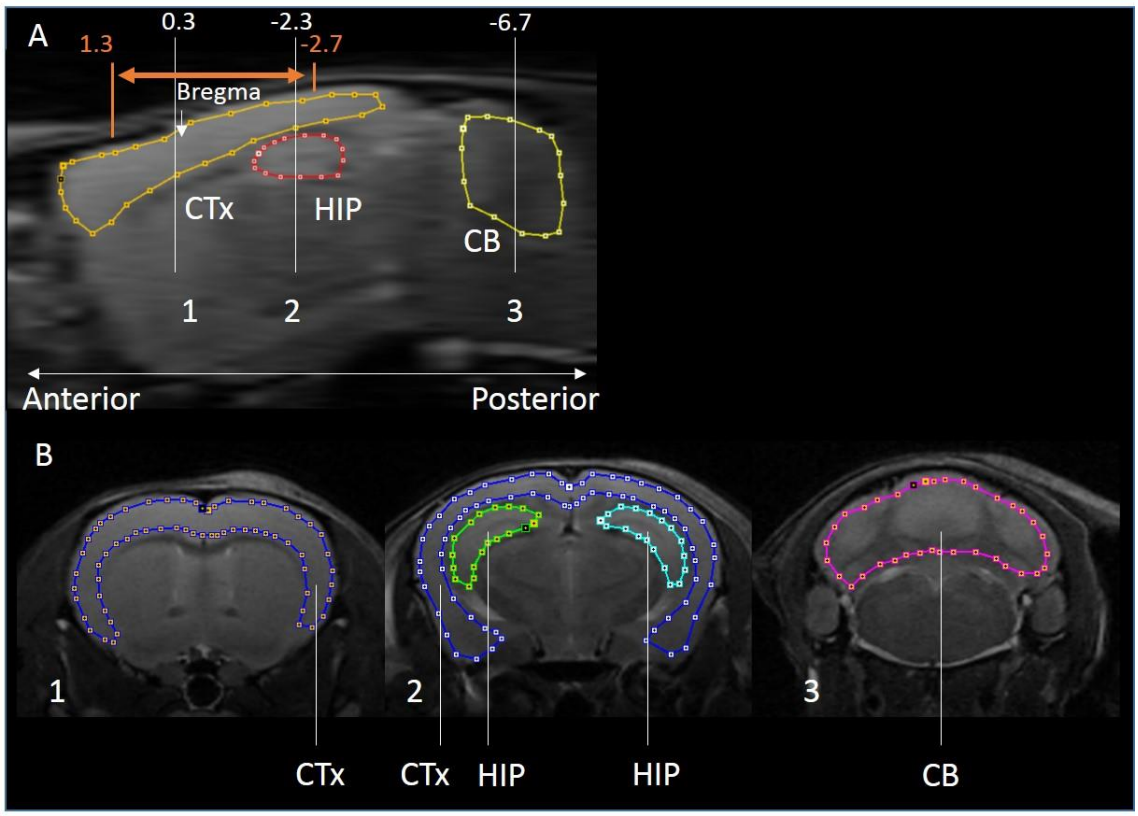
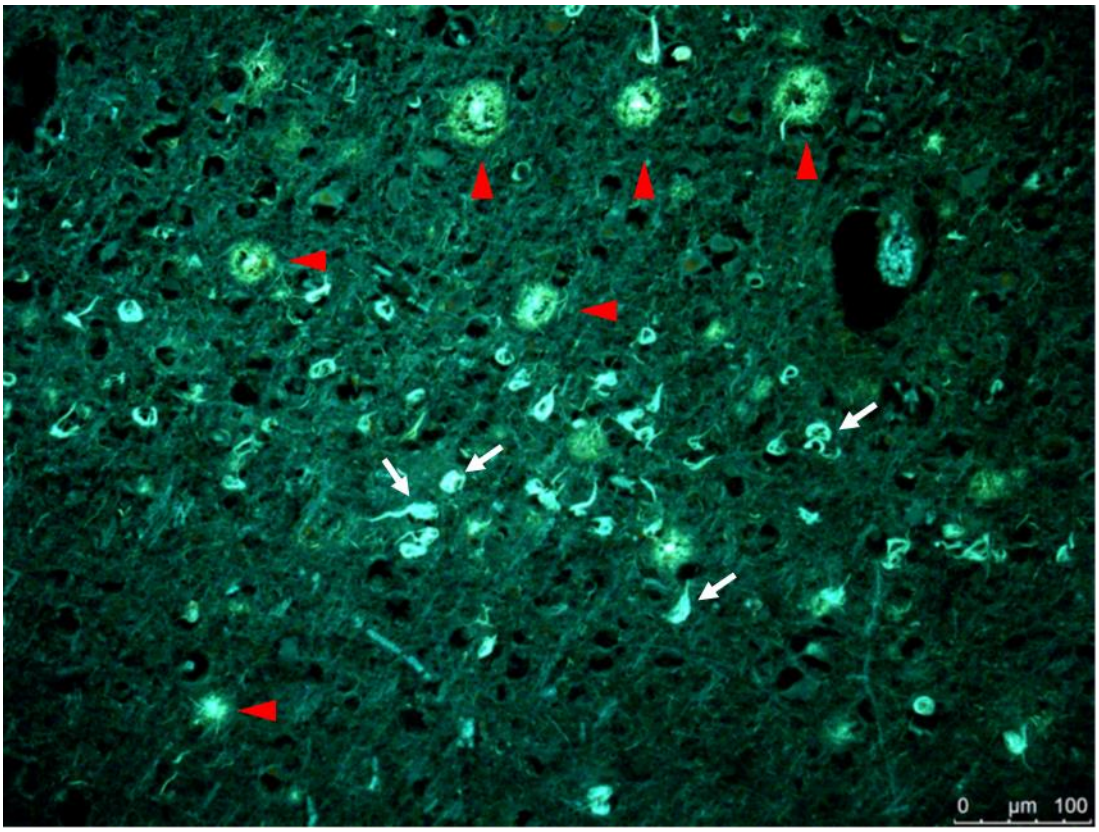


Supplemental Figure 1. Workflow of the current experiments using rTg4510 and non-Tg control mice. *In-vivo* ^{11}C-PBB3-PET for all Tg and non-Tg mice was followed by structural MRI for a subset of these animals. Brain samples of all mice were then collected for *in-vitro* ^{11}C-PBB3 binding assays and immunohistochemical analysis.



Supplemental Figure 2. Anatomical location of volumes of interest (VOIs) for PET and volumetric analysis.

Sagittal (A; 2.3 mm lateral to the bregma) T2-weight MRI slices of a non-Tg littermate of rTg4510 mouse showed ranges of three structures: neocortex (CTx), hippocampus (HIP) and cerebellum (CB). Representative VOIs on coronal section images at positions 1, 2 and 3 (0.3 mm anterior and 2.3 and 6.7 mm posterior to the bregma, respectively) were displayed in panel B. VOI covering the entire neocortex was used for the volumetric analysis, while the neocortical VOI used for PET measurements spanned from 1.3 mm anterior to 2.7 mm posterior to the bregma (indicated by an orange arrow).



Supplemental Figure 3. Fluorescent staining of an AD frontal cortex section with FSB. The tissue was derived from the region used for the homogenate binding assay. Amyloid plaques and neurofibrillary tangles were indicated by red arrowheads and while arrows, respectively.