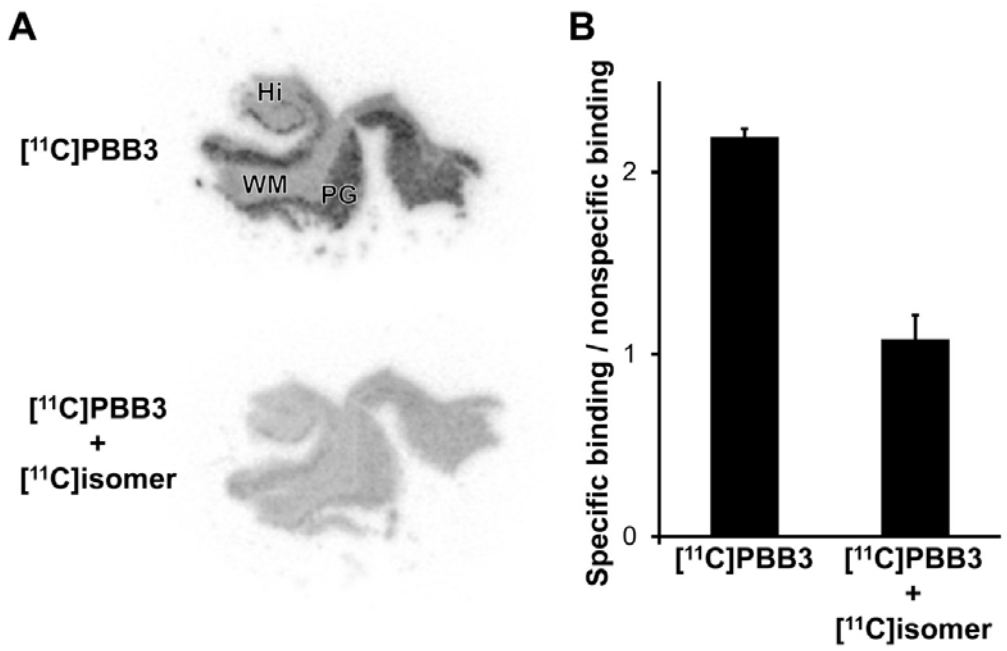

Supplemental Figure 1. In vitro autoradiographic binding of ^{11}C-PBB3 and its photoisomer to postmortem brain slices of an Alzheimer disease patient. (A) Labeling of sections containing the hippocampus (Hi), parahippocampal gyrus (PG) and white matter (WM). Samples were reacted with either ^{11}C-PBB3 (top) or mixture of ^{11}C-PBB3 and its radioactive photoisomer (bottom) at a concentration of 5 nM. (B) Quantification of radioligand binding. Specifically and nonspecifically bound radioligands were quantified by defining regions of interest on the gray and white matter, respectively, and ratios of specific binding to nonspecific binding were determined. Error bars represent SEM.

Mixture of ^{11}C-PBB3 and its photoisomer was prepared by exposing ^{11}C-PBB3 to fluorescent light for 10 min, and ^{11}C-PBB3, ^{11}C-isomer, and unidentified products accounted for 51%, 43%, and 6%, respectively, of total radioactivity.

Brain sections (6 μm hick) were preincubated with autoradiography buffer (50 mM Tris-HCl containing 20% ethanol; pH 7.4) at 25°C for 30 min and were then reacted with radioligands in the autoradiography buffer at 25°C for 60 min. The sections were washed 2 times with ice-cold autoradiography buffer for 2 min, were rinsed with ice-cold water for 10 s, and were then quickly dried under a stream of air. Radioactivity retained on the sections was determined using BAS imaging plate and BAS5000 system (Fujifilm).

Supplemental Table 1. Radiation dosimetry of ^{11}C-PBB3 extrapolated from mice and estimated for a 73.7-kg human male

Target organ	μSv/MBq*
Adrenals	3.17
Brain	0.993
Breasts	2.22
Gallbladder wall	11.2
Lower large intestinal wall	3.14
Small intestine	10.8
Stomach wall	2.99
Upper large intestinal wall	3.94
Heart wall	2.29
Kidneys	4.99
Liver	9.52
Lungs	2.79
Muscle	1.64
Ovaries	3.40
Pancreas	3.30
Red marrow	2.44
Osteogenic cells	3.59
Skin	1.95
Spleen	1.74
Testes	1.38
Thymus	2.44
Thyroid	2.35
Urinary bladder wall	2.84
Uterus	3.38
Total body	2.86
Effective dose	3.28

*The obtained biodistribution data were entered into the OLINDA software. This software generates effective dose (ED) estimates in μSv/MBq units, based on adult human male and female organ models.