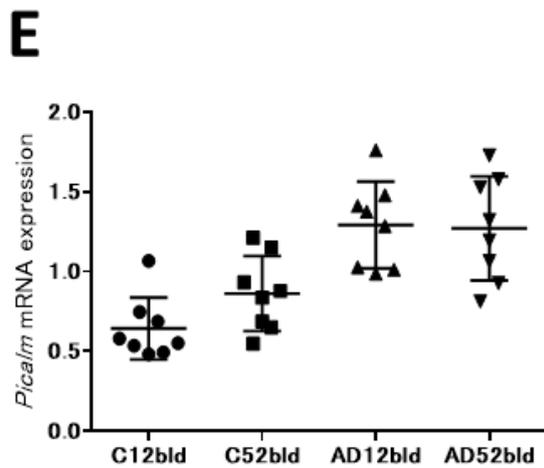
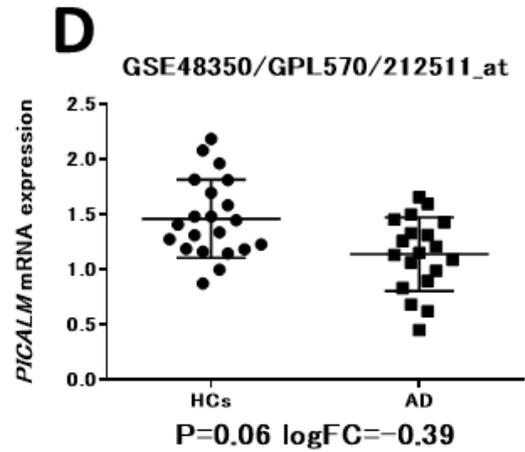
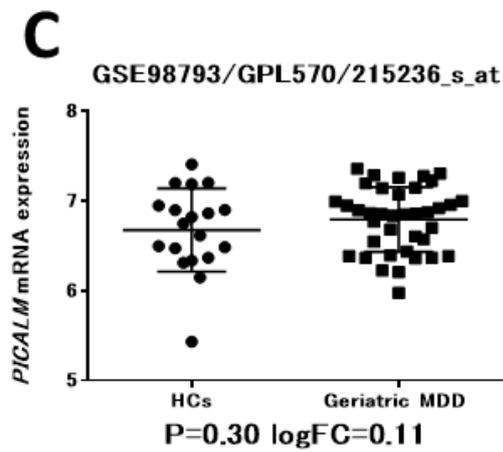
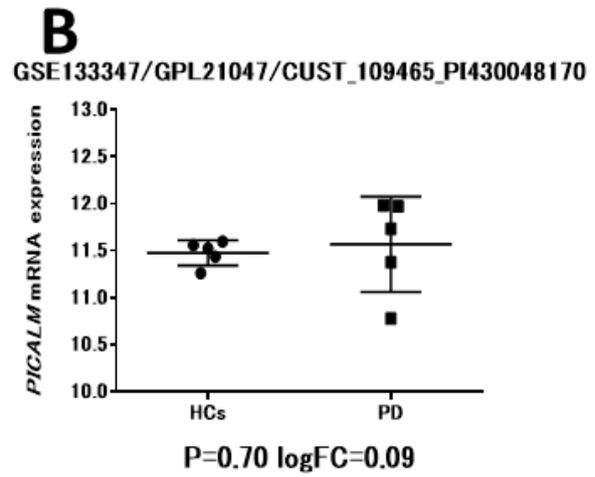
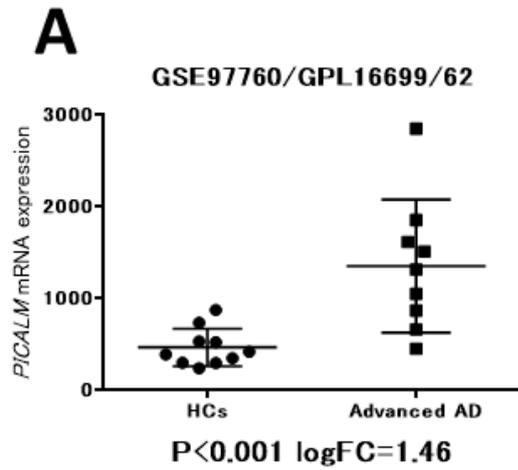


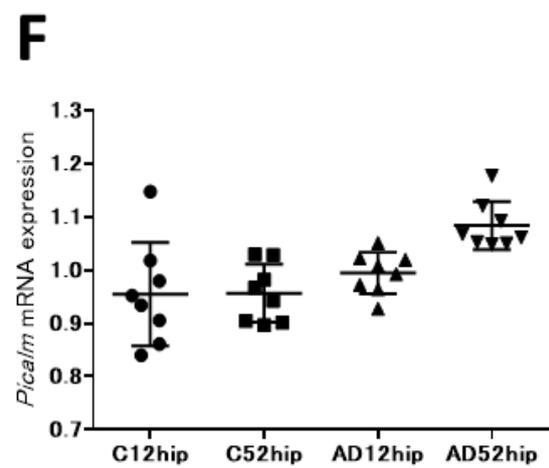
# Supplementary Material

## ***PICALM* mRNA Expression in the Blood of Patients with Neurodegenerative Diseases and Geriatric Depression**

**Supplementary Figure 1.** Validation analyses using public functional genomics data. A) significantly higher mRNA expression was seen in the blood of patients with AD ( $p < 0.001$  logFC 1.46). B) No change was seen in the blood of patients with PD ( $p = 0.70$  logFC=0.09). C) No change was seen in the blood of patients with geriatric MDD ( $p = 0.30$  logFC=0.11). D) No change was seen in the hippocampus of patients with AD ( $p = 0.06$  logFC=-0.39). E) Significantly higher *Picalm* mRNA expression was seen in the blood of 3xTg-AD mice (one-way ANOVA  $p < 0.001$ , Tukey's HSD  $p < 0.001$  [C12 bld versus AD12 bld and C12 bld versus AD52 bld]). F) Significantly higher *Picalm* mRNA expression was seen in the hippocampus of 3xTg-AD mice (one-way ANOVA  $p < 0.001$ , Tukey's HSD  $p < 0.001$  [C12 hip versus AD52 hip]). AD, Alzheimer's disease; PD, Parkinson's disease; MDD, major depressive disorder.



ANOVA  $P < 0.001$  Tukey's HSD  $P < 0.001$  (C12 bld vs. AD12 bld and C12 bld vs. AD52 bld)



ANOVA  $P < 0.001$  Tukey's HSD  $P < 0.001$  (C12 hip vs. AD52 hip and C52 hip vs. AD52 hip)

**Supplementary Figure 2.** *PICALM* mRNA expression using *18S rRNA* as the second reference gene was compared among patients with several neuropsychiatric diseases (AD, PD, DLB, and geriatric MDD) and HCs. *PICALM* mRNA expression was significantly higher in patients with AD but was not changed in patients with PD and was significantly decreased in patients with geriatric MDD compared with HCs (AD versus HCs:  $p=0.046$ , PD versus HCs:  $p=0.673$ , DLB versus HCs:  $p=0.200$ , geriatric MDD versus HCs:  $p=0.007$ ). AD, Alzheimer's disease; PD, Parkinson's disease; DLB, dementia with Lewy bodies; MDD, major depressive disorder; HCs, healthy controls.

