

Supplemental Information

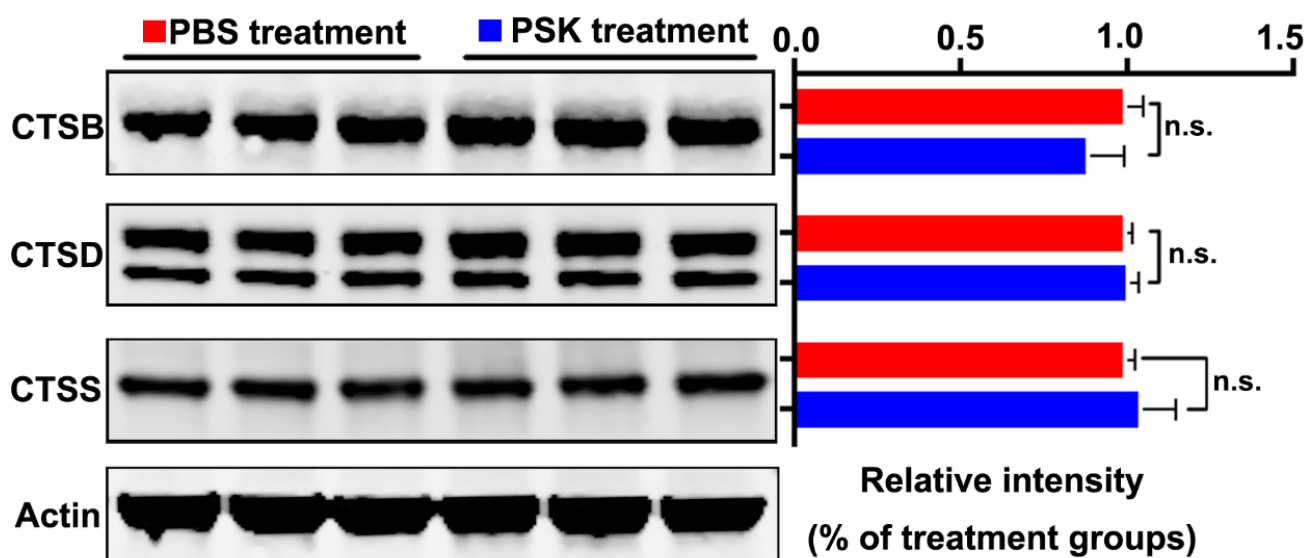


Fig. S1 PSK has no effect on the expression of lysosomal A β -degrading enzymes in monocytes.

Western blots and quantitative analysis of the lysosomal A β -degrading enzymes cathepsin B, cathepsin D, and cathepsin S (mean \pm SEM of triplicate wells in each treatment group; n.s., not significantly different, Student's *t*-test). PSK, polysaccharide kestin, A β , amyloid β -protein; PBS, phosphate-buffered saline; CTSB, cathepsin B; CTSD, cathepsin D; CTSS, cathepsin S.

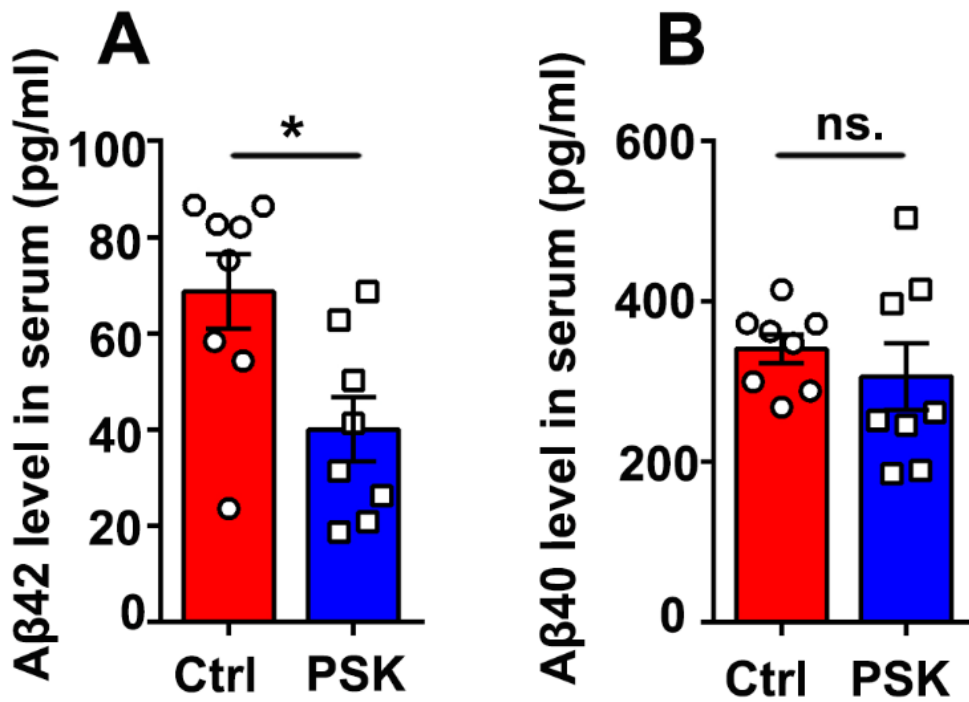


Fig. S2 PSK reduces Aβ₄₂ levels in the blood of APP/PS1 mice. Aβ₄₂ (A) and Aβ₄₀ (B) levels in blood of APP/PS1 mice from ELISA (n = 8 per group; mean ± SEM; *p < 0.05, n.s., not significantly different, Student's *t*-test. PSK, polysaccharide kestun; CON, control; Tg, transgenic, Aβ, amyloid-β.

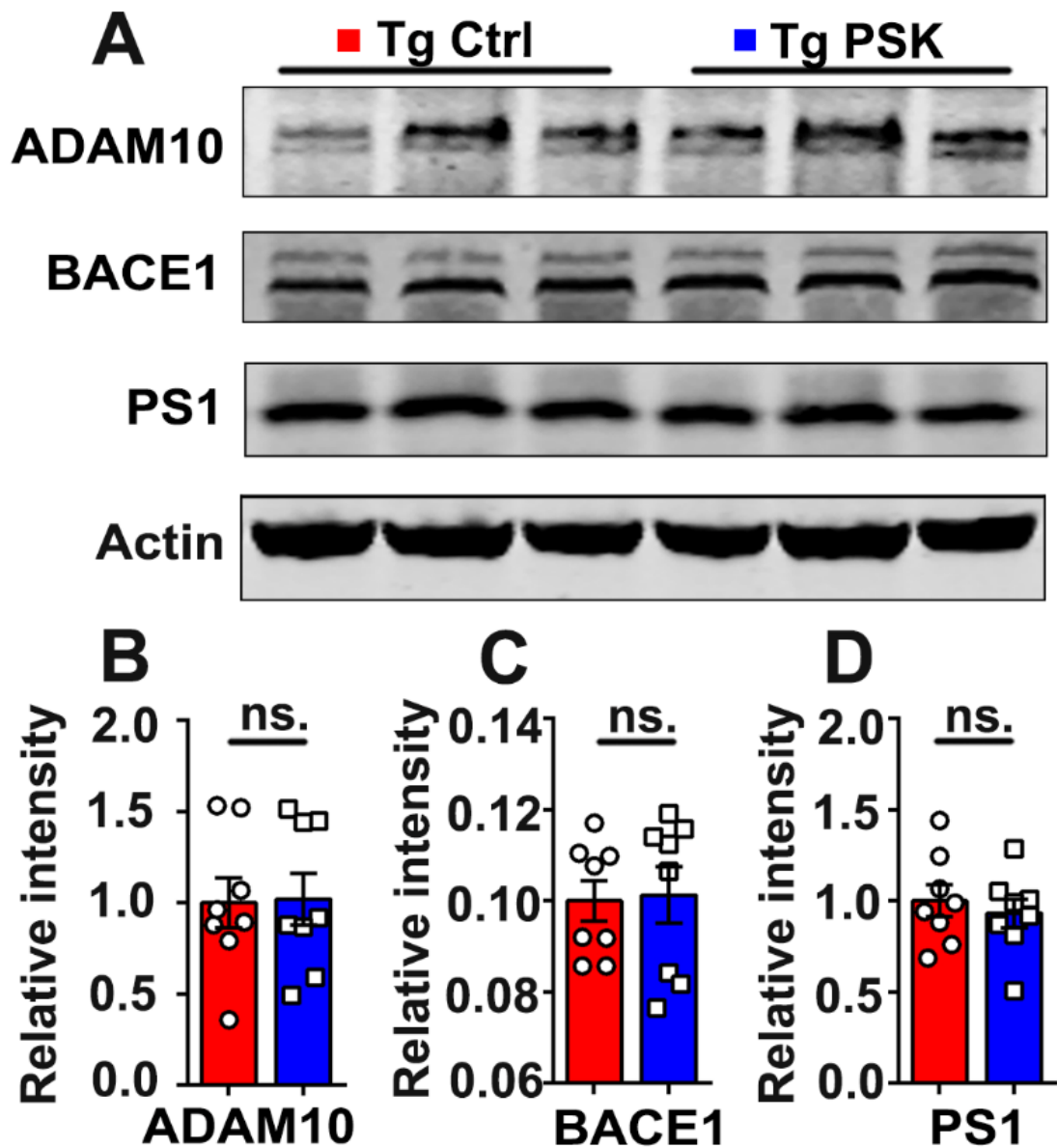


Fig. S3 PSK has no effect on the expression of APP metabolism-related enzymes. Images of western blots (A) and quantitative analysis for the APP metabolism-related enzymes ADAM10, BACE1, and PS1 (B–C) in brain homogenates (n = 8 per group; mean ± SEM.; n.s, not significantly different, Student’s *t*-test). PSK, polysaccharide kestlin; Ctrl, control; Tg, transgenic; A β , amyloid- β ; TLR2, toll-like receptor 2; ADAM10, metalloprotease 10; BACE1, β -site APP cleaving enzyme; PS1, presenilin 1.

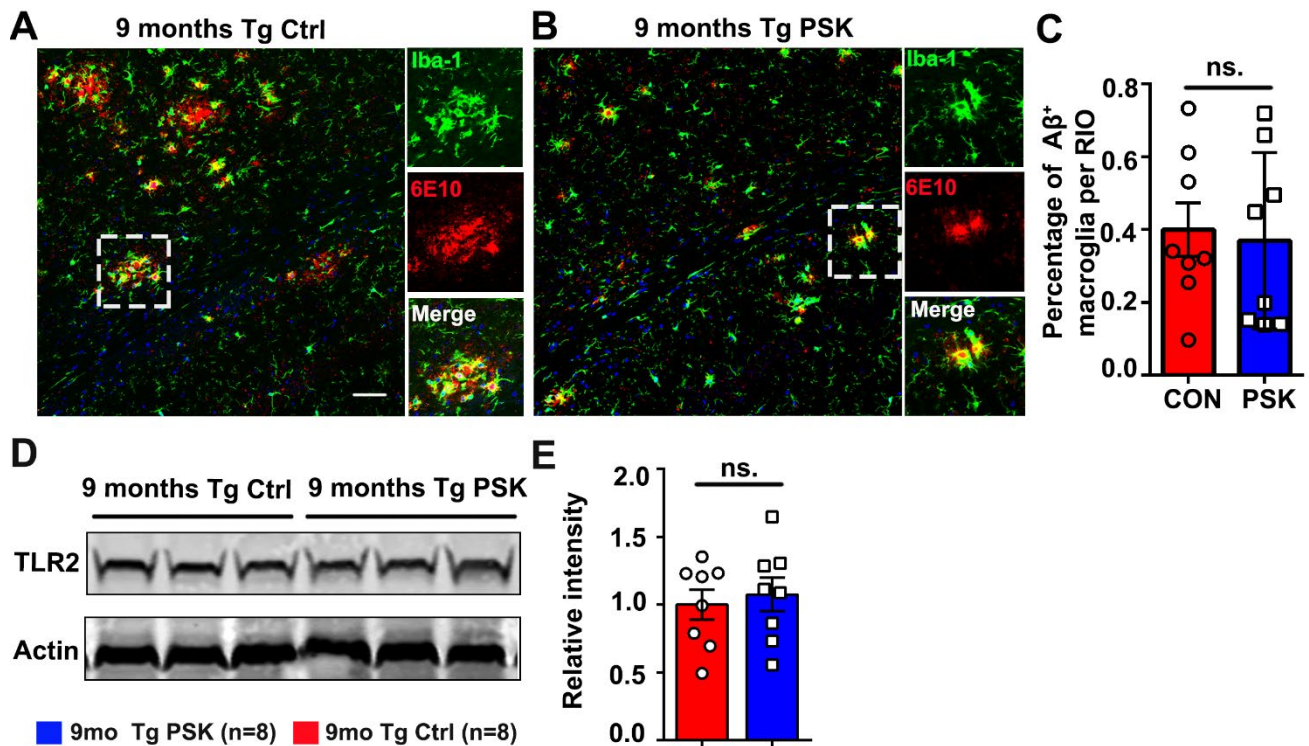


Fig. S4 PSK has no effect on A β uptake by microglia in the brain of AD mice. (A–C) Confocal stack images of microglia and A β plaques in the CA1 region of the hippocampus stained with anti-Iba1 and anti-A β (6E10), and quantitative analysis of immunoreactive area of co-localized A β and IBA1 in APP/PS1 mice in the two groups. Insets: representative morphology at a higher magnification. Scale bar, 50 μ m. (D) Western blots and quantitative analysis of TLR2 expression in the brains of APP/PS1 mice. n = 8 per group; mean \pm SEM; n.s., no significant difference, Student's *t*-test. TLR2, toll-like receptor 2; PSK, polysaccharide kestlin; Ctrl, control; Tg, transgenic, A β , amyloid- β .

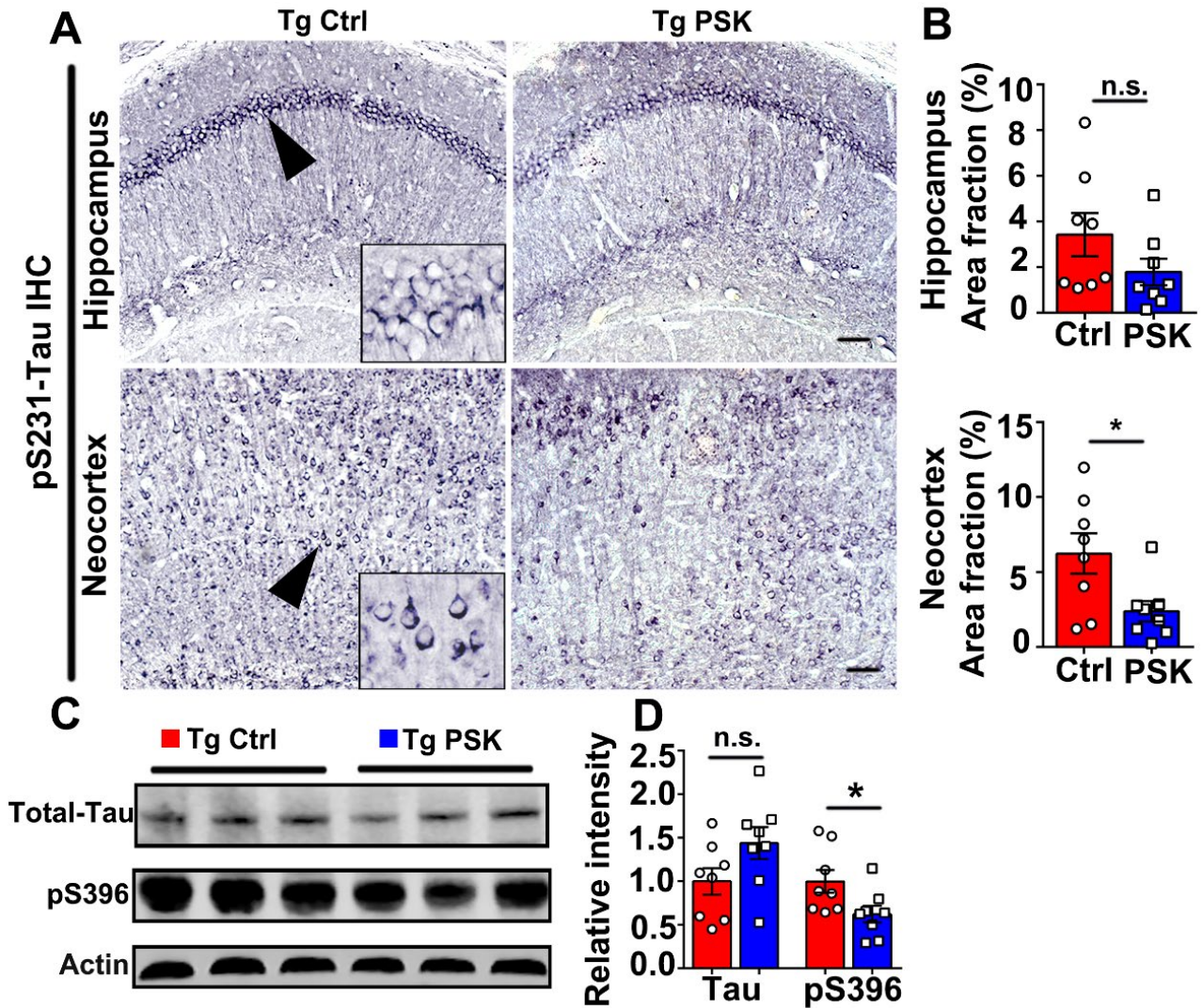


Fig. S5 PSK attenuates tau phosphorylation in APP/PS1 mice. (A, B) Quantification of tau phosphorylation using pSer231-Tau immunohistochemistry. Insets: representative morphology at a higher magnification. Scale bars, 100 μ m. (C, D) Western blots and quantification of phosphorylated tau at the pS396 site and total tau (T-tau) in brain homogenates (n = 8 per group; mean \pm SEM *p < 0.05, n.s., not significantly different, Student's *t*-test. PSK, polysaccharide kestlin; Ctrl, control; WT, wild-type; Tg, transgenic.