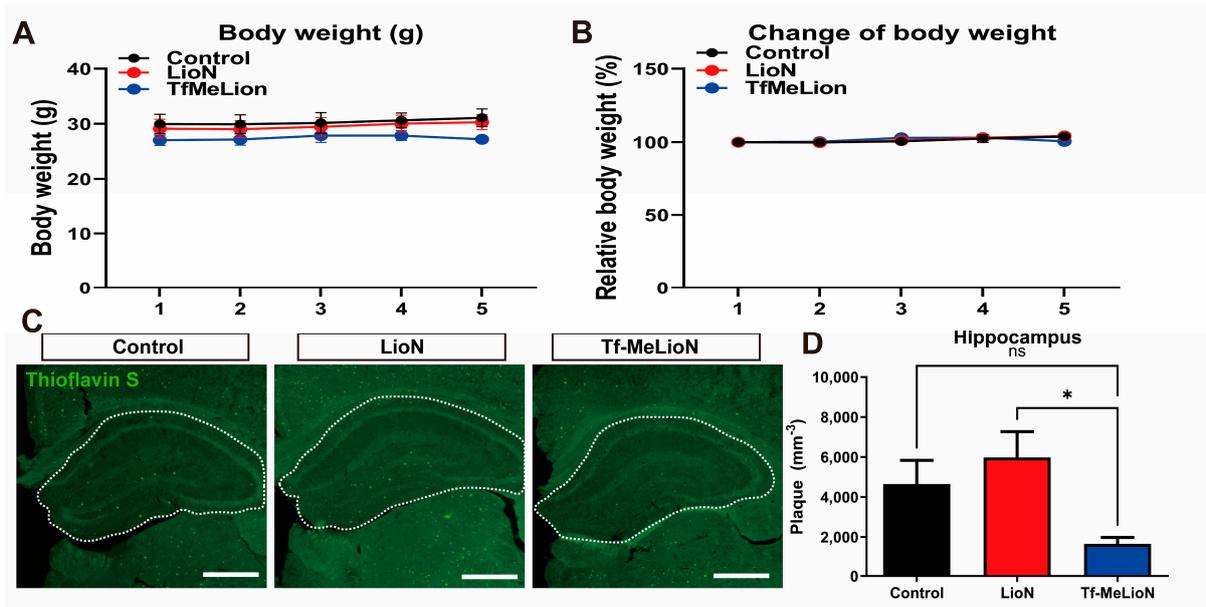


Supplementary Figure S1. Brain delivery of Tf-MeLioNs to 5XFAD mice. (A) Whole-mouse imaging was performed at various time-points (10 min, 24 h, and 48 h) using the IVIS® Lumina III system, following intravenous administration of Tf-MeLioNs. (B) Representative images of Prussian Blue staining of 5XFAD mice tissues from the PBS- (control) and Tf-MeLioNs-administered groups. Blue pigments (white arrow) in the DG of hippocampus indicate Tf-MeLioNs. Scale bar: 50 μm . Tf-MeLioNs, transferrin-conjugated melittin-loaded L-arginine-coated iron oxide nanoparticles



Supplementary Figure S2. Effects of Tf-MeLioN treatment on the number of amyloid plaques in the early stage of 5XFAD mice. Relative body weight change was observed and recorded weekly over five weeks (A-B). Representative images of Thioflavin S staining of the hippocampus tissues. Scale bar: 1000 μm (C). Quantification of the number of Thioflavin-S-positive plaques in the hippocampus (D). * $p < 0.05$ (one-way analysis of variance with Tukey's post hoc analysis). Data are presented as mean \pm standard error of the mean. $n = 4-5$ per group, for analyzing the number of amyloid plaques. LioNs, L-arginine-coated iron oxide nanoparticles; Tf-MeLioNs, transferrin-conjugated melittin-loaded LioNs