SUPPORTING INFORMATION

Table S1. List of primary antibodies

Target and Antibody	Source	Catalog No.	Application / Dilution
LAMP2	Millipore	MABC40	WB: 1: 1000 ICC: 1 : 500
GFAP	DAKO	IS524	ICC: 1 : 1000 IHC: 1 : 1000
TFEB	Abcam	ab2636	WB: 1 : 500 ICC: 1 : 500 IHC: 1 : 500
MAP2	Millipore	AB5622	ICC: 1 : 750
PPARα	Santa Cruz	sc-398394	ICC: 1 : 500 ChIP: 1 : 100
PPARβ	Santa Cruz	sc-7197	ChIP: 1 : 100
PPARγ	Santa Cruz	sc-7273	ChIP: 1 : 100
CBP	Santa Cruz	sc-369	ChIP: 1 : 100
RNA Pol	Millipore	05–623	ChIP: 1 : 200
β-Amyloid Mouse monoclonal (6E10)	BioLegend	803001	WB: 1 : 1000 IHC: 1 : 500
β-Actin	Abcam	ab6276	WB: 1 : 10000

WB: Western blot; ICC: immunocytochemistry; IHC: immunohistochemistry; ChIP: chromatin immunoprecipitation.

LEGENDS TO SUPPLEMENTAL FIGURES

Figure S1. Cinnamic acid upregulates lysosomal markers in vivo in 5XFAD mice. Six months old 5XFAD mice were treated with cinnamic acid (100 mg/kg/day) daily for one month following which (A-F) the TFEB level in the (A, B) CA1, (C, D) DG regions of the hippocampus and the (E, F) cortex was analyzed by colabeling TFEB and GFAP and quantification of the mean fluorescence intensity of TFEB. (G-H) The activity of the enzymes (G) Cathepsin-B and (H) Tripeptidyl-peptidase was monitored in untreated Tg and cinnnamic acid treated mice. Data represents fold change mean ± SEM with respect to the untreated Tg control. Statistical analysis was performed by student's unpaired t-test. * p<.05; ** p<.01; *** p<.001.

Figure S2. Cinnamic acid lowers amyloid-beta levels in 5XFAD mice. Six months old 5XFAD mice (n=8 / group) were treated via oral gavage with cinnamic acid (100 mg/kg/day) or vehicle (.5% methylcellulose) daily for one month following which they were sacrificed and the

cerebral amyloid-beta levels were analyzed by (A-B) Diaminobenzidine staining using Aβ 6E10 antibody and quantification of amyloid plaques per mm^2 in the hippocampus. All data represents mean ± SEM. One way ANOVA followed by Tukey's multiple comparison test was used for statistical analysis; * $p<.05$; ** $p<.01$; *** $p<.001$.

Figure S3. Oral administration of cinnamic acid reduces amyloid plaque deposition in the hippocampus of 5XFAD mice. Six months old 5XFAD mice (n=8 / group) were treated orally with cinnamic acid (100 mg/kg/day) or vehicle (.5% methylcellulose) daily for one month followed by monitoring of cerebral amyloid plaque deposition by colabeling free floating hippocampal sections with thioflavin-S and Aβ 6E10 antibody. Thio-S and Aβ positive plaques in (A) CA1 and (B) CA3 are shown.

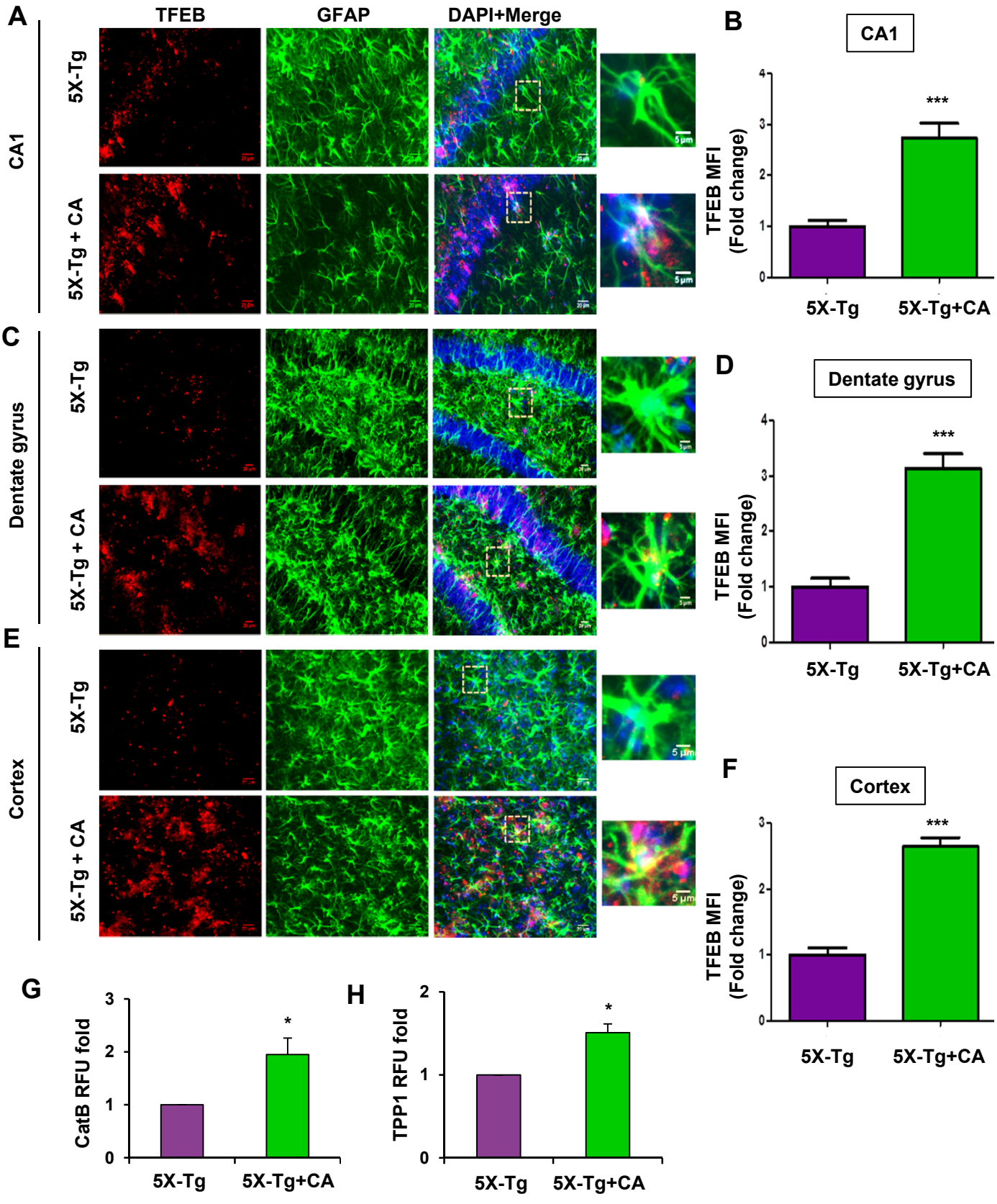
A
TFEB
GFAP
DAPI+Merge
CA1
5X-Tg
5X-Tg + CA
B
CA1
TFEB MFI (Fold change)
***
5X-Tg
5X-Tg+CA
C
Dentate gyrus
D
Dentate gyrus
E
Cortex
F
Cortex
G
CatB RFU fold
*
H
TPP1 RFU fold
*

Figure S1

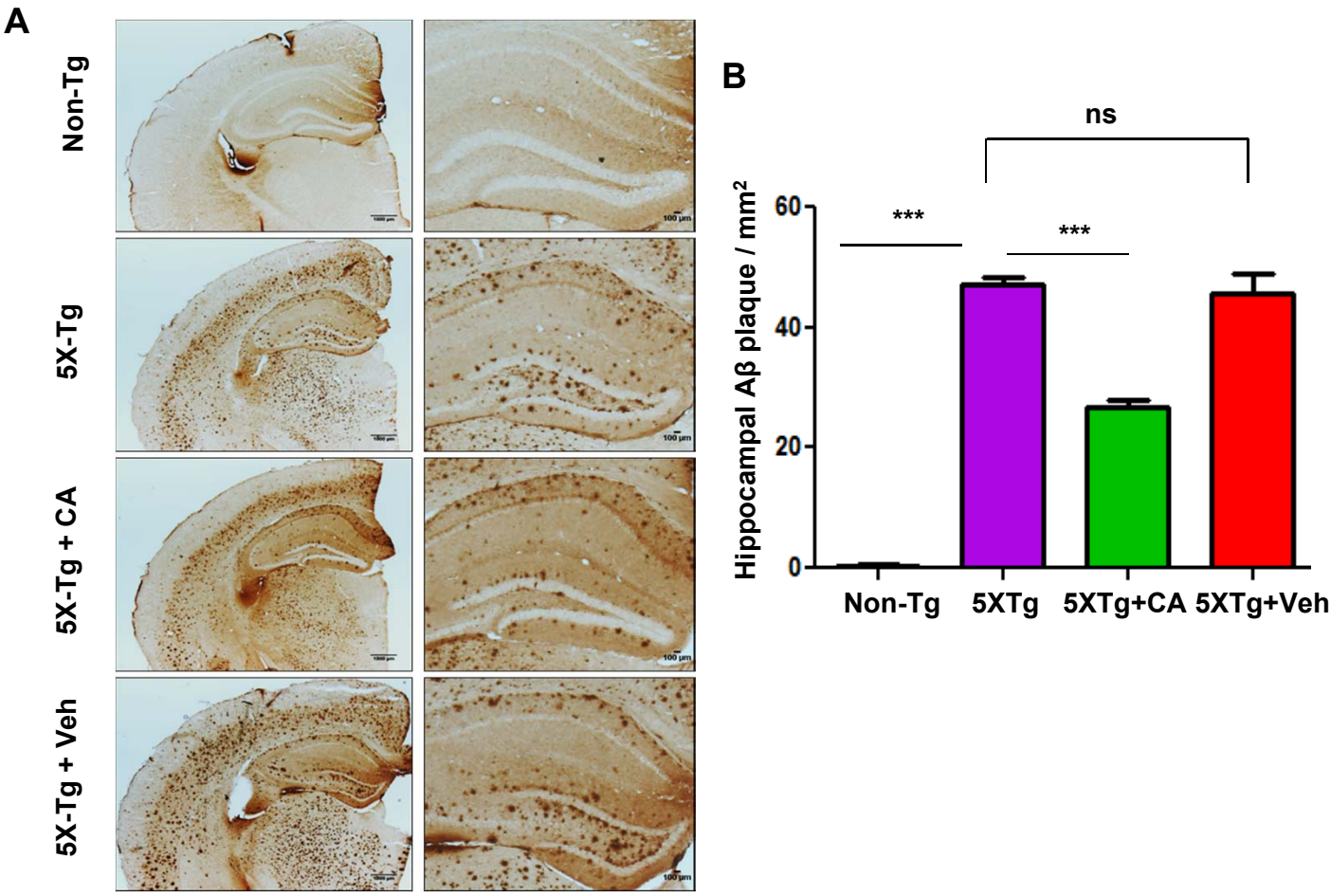
A
Non-Tg
5X-Tg
5X-Tg + CA
5X-Tg + Veh
B
ns
***
***
Hippocampal Aβ plaque / mm²
60
40
20
0
Non-Tg
5XTg
5XTg+CA
5XTg+Veh

Figure S2

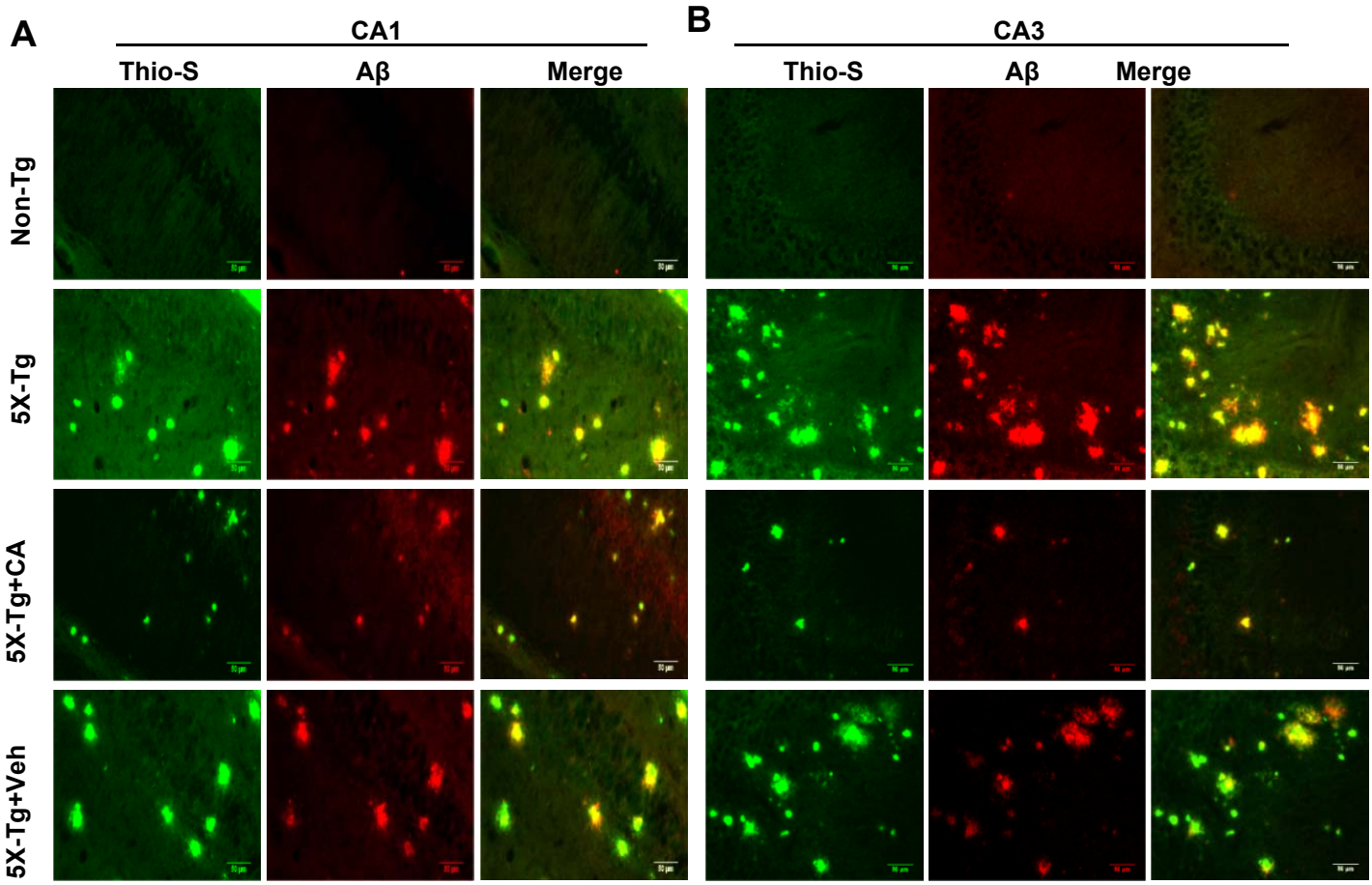
A
CA1
Thio-S
Aβ
Merge
B
CA3
Thio-S
Aβ
Merge
Non-Tg
5X-Tg
5X-Tg+CA
5X-Tg+Veh

Figure S3