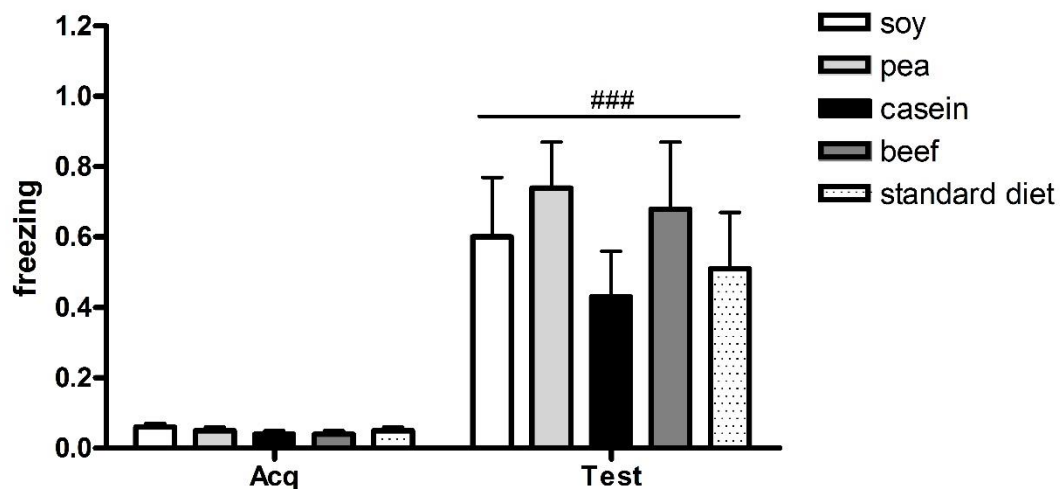
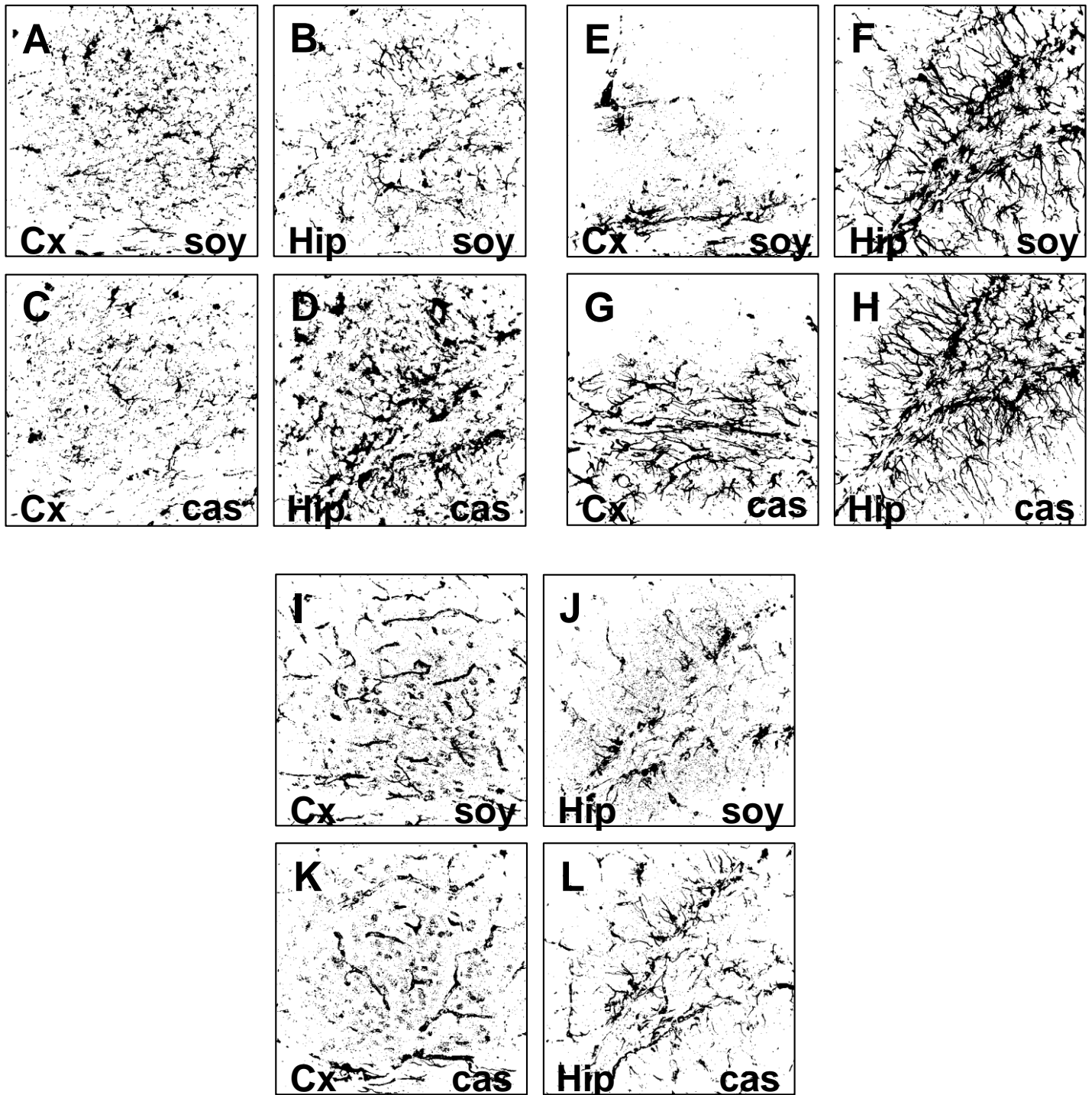


# Supplementary Figure 1



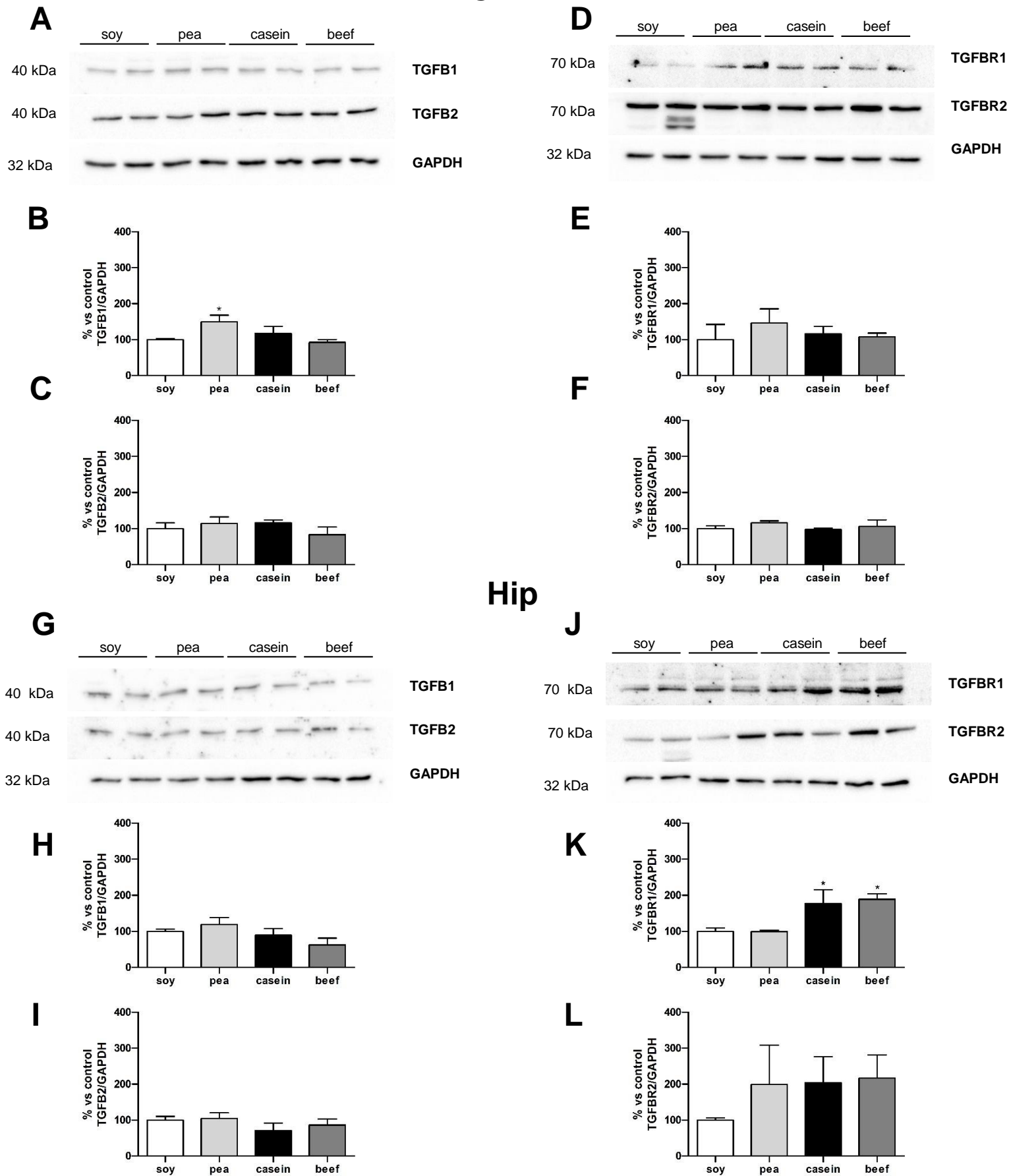
**Supplementary figure 1.** Effect of dietary protein source on cognitive performance during fear conditioning testing (Acq/before conditioning and Test/24h after conditioning) in 4-month old male SAMP8 mice. Values are the mean  $\pm$  SE of 6 animals per dietary group: ### p < 0.001 compared Acq (before conditioning) to Test (24h after conditioning): two-way ANOVA followed by Tukey's post-hoc test.

## Supplementary Figure 2



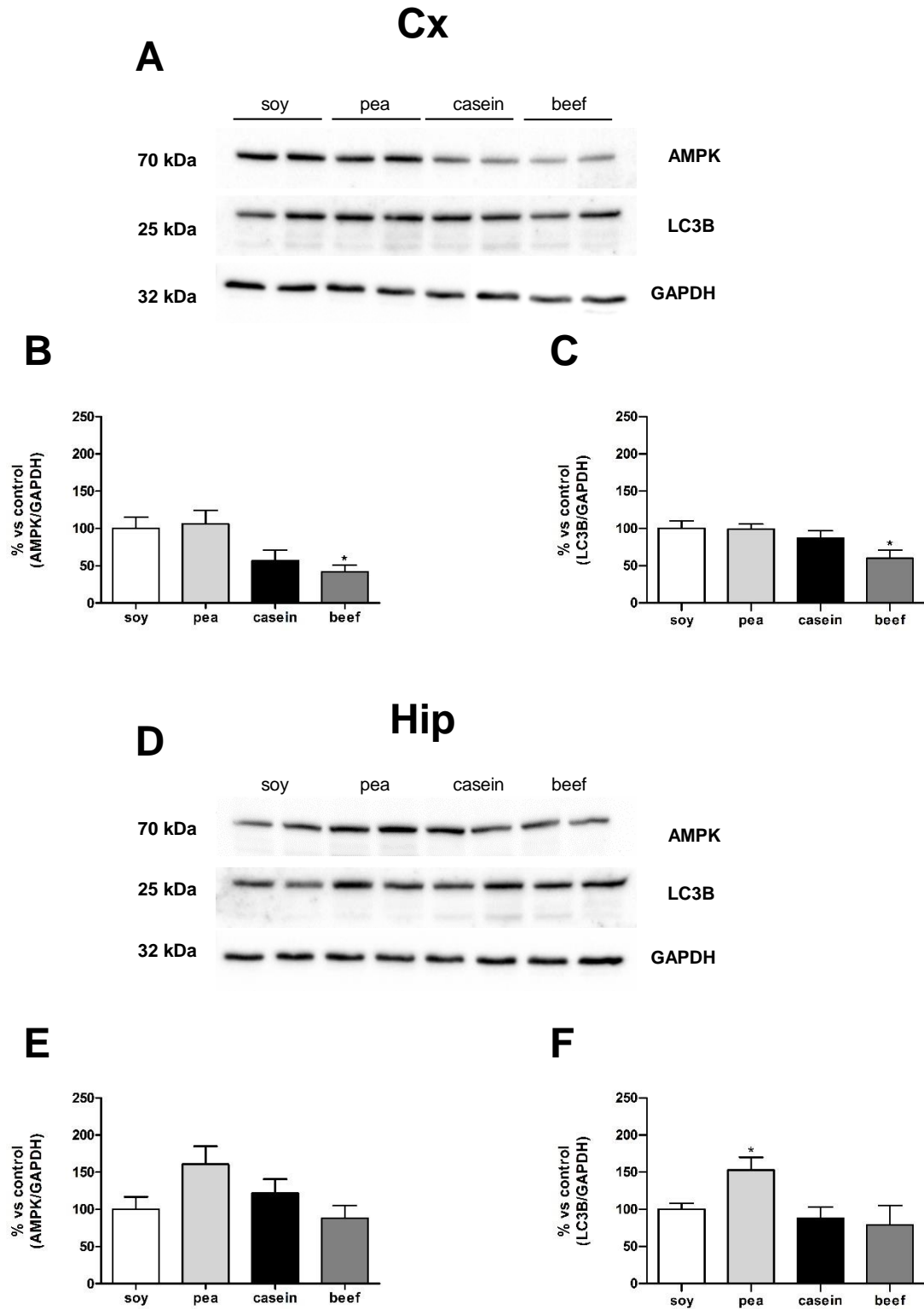
**Supplementary figure 2.** (A-D) Representative threshold images used for IBA1 signal intensity quantification in the frontal cortex (A, C) and hippocampus (B, D) of 4-month old male SAMP8 mice fed the soy and casein-protein diets. (E-H) Representative threshold images used for GFAP signal intensity quantification in the frontal cortex (E, G) and hippocampus (F, H) of 4-month old male SAMP8 mice fed the soy and casein-protein diets. (I-L) Representative threshold images used for DCX signal intensity quantification in the frontal cortex (I, K) and hippocampus (J, L) of 4-month old male SAMP8 mice fed the soy and casein-protein diets.

# Supplementary Figure 3



**Supplementary figure 3.** Analysis of oligodendrocyte-associated marker expression in 4-month old male SAMP8 mice fed different diets. Western blot analysis and relative densitometries of TGFB1 (A, B), TGFB2 (A, C), TGFB1 (D, E) and TGFB2 (D, F) expression in the frontal cortex and TGFB1 (G, H), TGFB2 (G, I), TGFB1 (J, K) and TGFB2 (J, L) expression in the hippocampus of male SAMP8 mice. Values are the mean  $\pm$  SE of 6 animals, \*  $p < 0.05$  vs soy-protein diet, Student's t-test.

# Supplementary Figure 4



**Supplementary figure 4.** Analysis of autophagy-associated marker expression in 4-month old male SAMP8 mice fed different diets. Western blot analysis and relative densitometries of AMPK (A, B) and LC3B (A, C) expression in the frontal cortex and AMPK (D, E) and LC3B (D, F) expression in the hippocampus of male SAMP8 mice. Values are the mean  $\pm$  SE of 6 animals, \*  $p < 0.05$  vs soy-protein diet, Student's t-test.