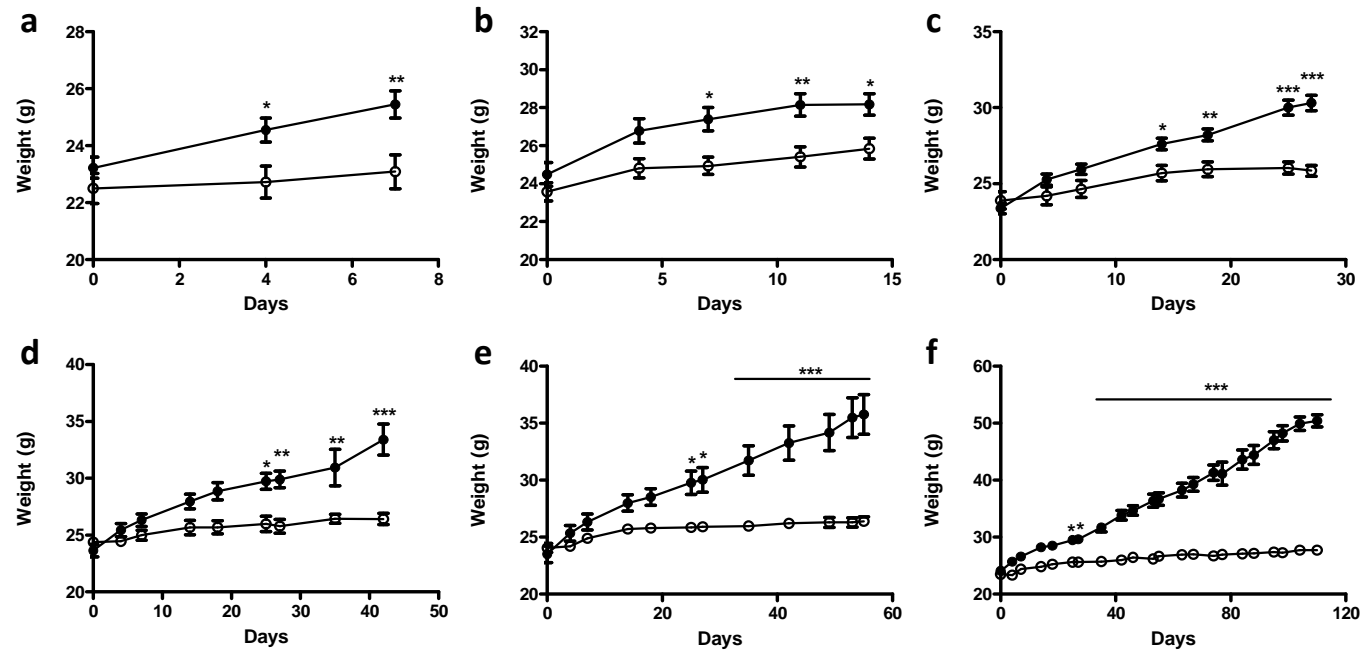


## Supplemental Figure 1

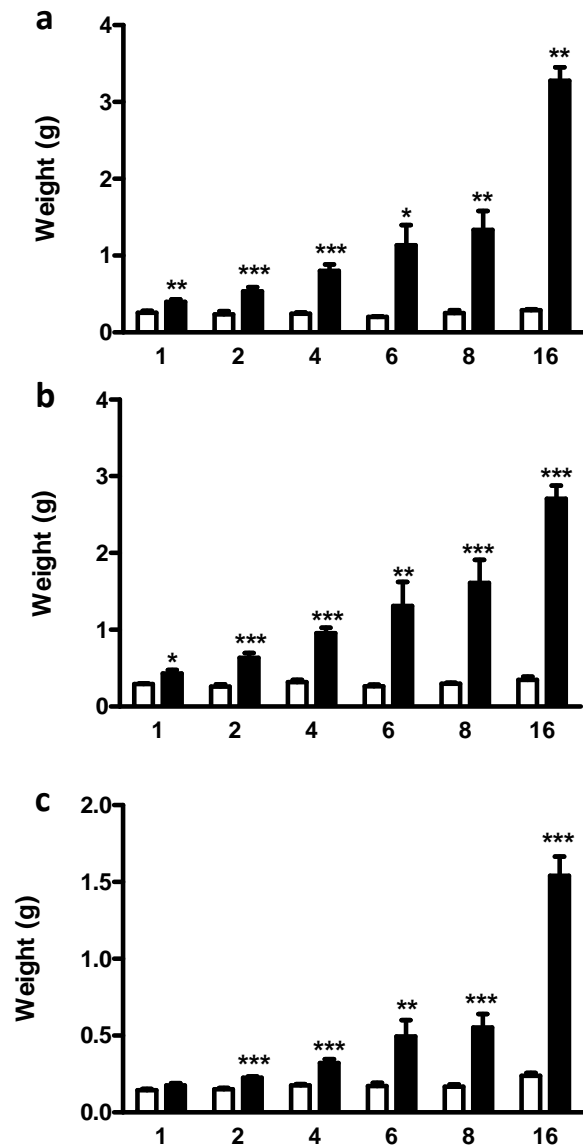
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**SI 1.** Weight of the mice on standard (empty dots) and high-fat (full dots) diets in the different groups after (a) 1 week, (b) 2 weeks, (c) 4 weeks, (d) 6 weeks, (e) 8 weeks and (f) 16 weeks. Data are mean  $\pm$  s.e.m.; two-way ANOVA with post hoc Bonferroni test between HFD group and its CTL group \* $P < 0.05$ ; \*\* $P < 0.01$  and \*\*\* $P < 0.001$

## Supplemental Figure 2

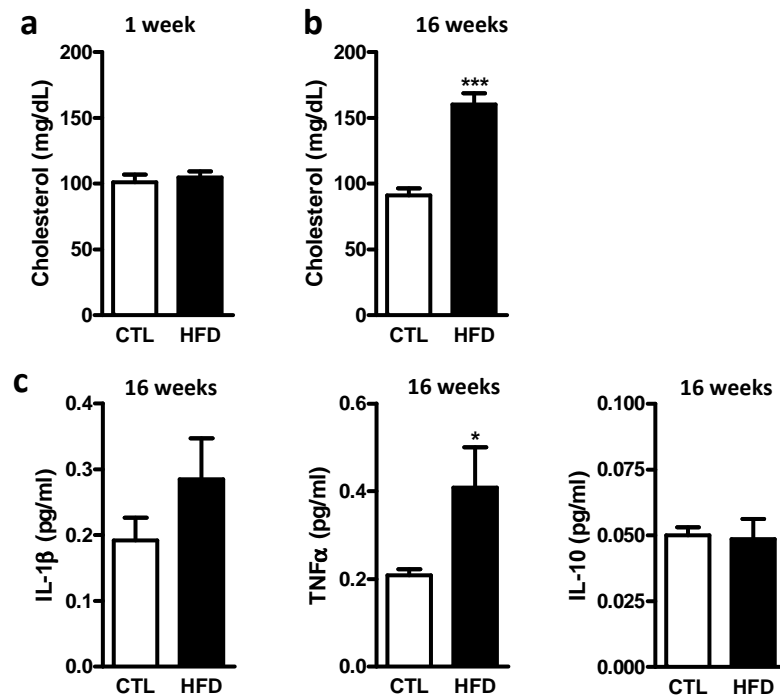
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SI 2. Weight of the (a) subcutaneous adipose tissue, (b) epididymal adipose tissue and (c) visceral adipose tissue at the selected time-points. Data are mean  $\pm$  s.e.m.; Student's t-test or Mann-Whitney test between each HFD group (black columns) and its respective CTL group (white columns) \* $P < 0.05$ ; \*\* $P < 0.01$  and \*\*\* $P < 0.001$ .

### Supplemental Figure 3

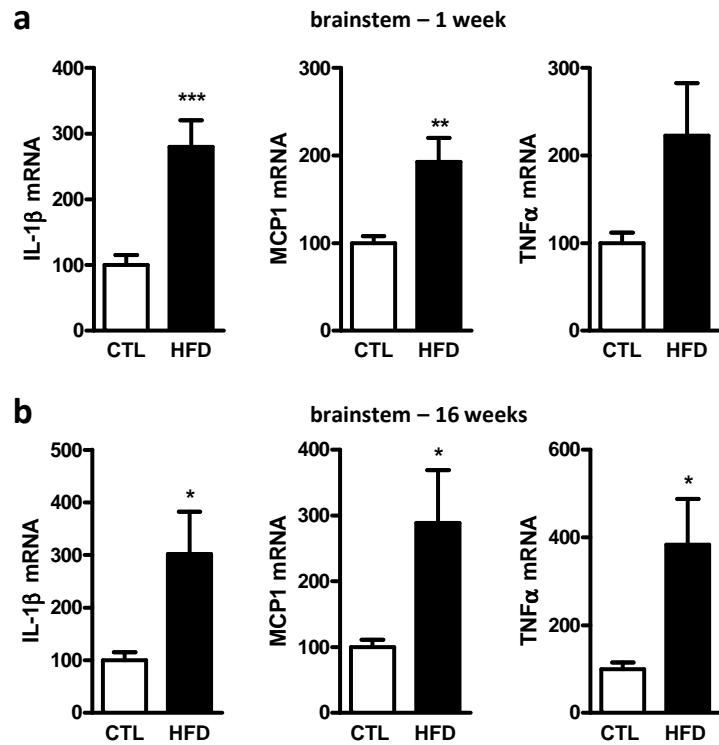
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**SI 3.** Total plasma cholesterol measured at (a) week 1 and (b) week 16. (c) Inflammatory markers measured in the plasma at week 16. Data are mean  $\pm$  s.e.m.; Student's t-test between the HFD group and its CTL group \*P<0.05 \*\*\*p<0.001.

## Supplemental Figure 4

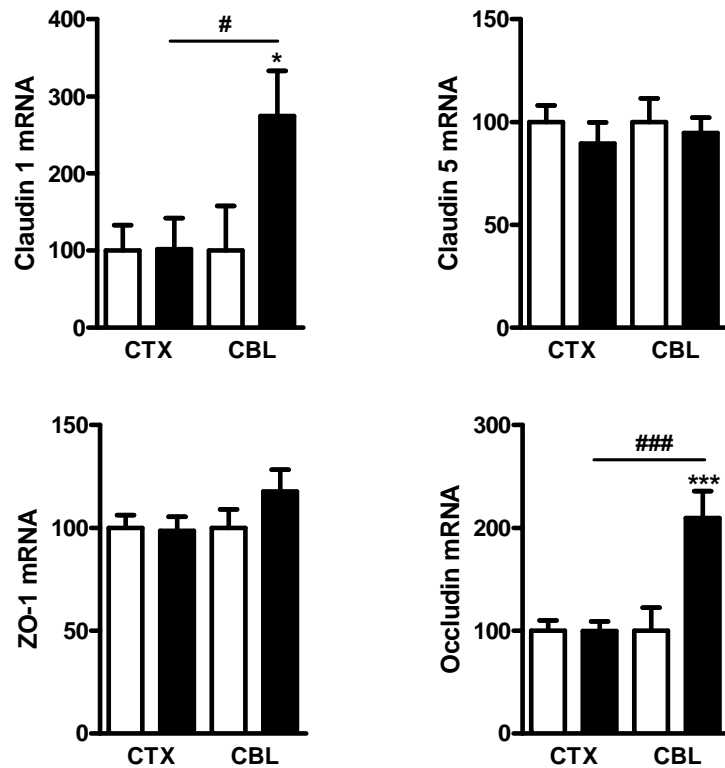
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**SI 4.** mRNA relative expression of inflammatory markers in the brainstem at (a) 1 week and (b) 16 weeks. The expression level in the control group is set at 100. Data are mean  $\pm$  s.e.m.; Student's t-test between the HFD group and its CTL group \* $P < 0.05$ ; \*\* $P < 0.01$  and \*\*\* $P < 0.001$ .

## Supplemental Figure 5

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**SI 5.** mRNA relative expression of junction proteins of the blood brain barrier at week 16 in the cortex and the cerebellum. The expression levels in the control groups were set at 100. Data are mean  $\pm$  s.e.m. The white columns represent mice fed a standard diet and the black columns represent the mice fed a HFD. One way ANOVA with Bonferroni's post-test and between HFD group and its respective CTL group \* $P < 0.05$  and \*\*\* $P < 0.001$  and between CNS regions # $P < 0.05$  and ### $P < 0.001$