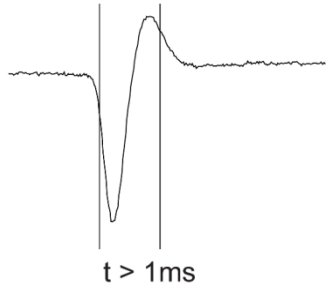
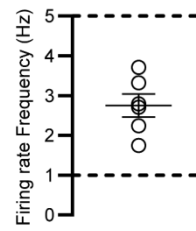


SUPPLEMENTARY DATA

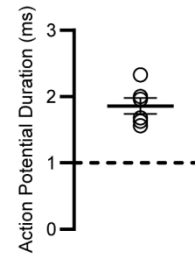
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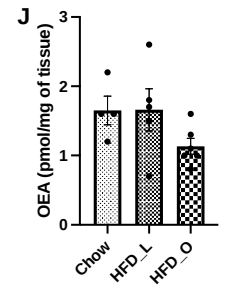
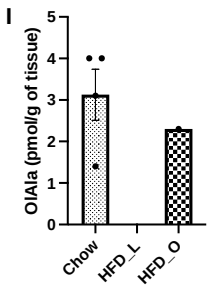
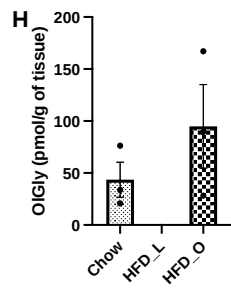
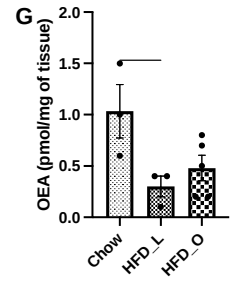
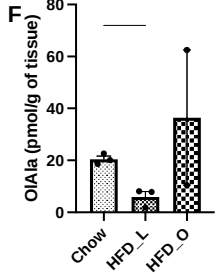
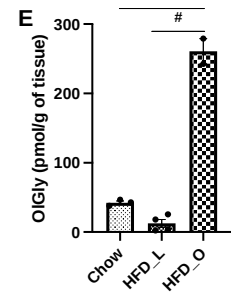
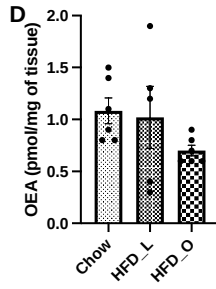
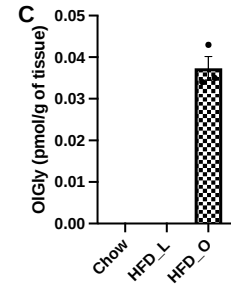
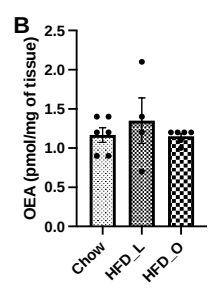
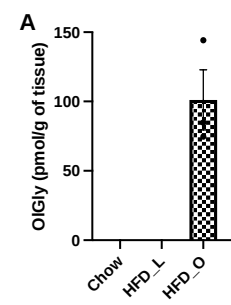
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C

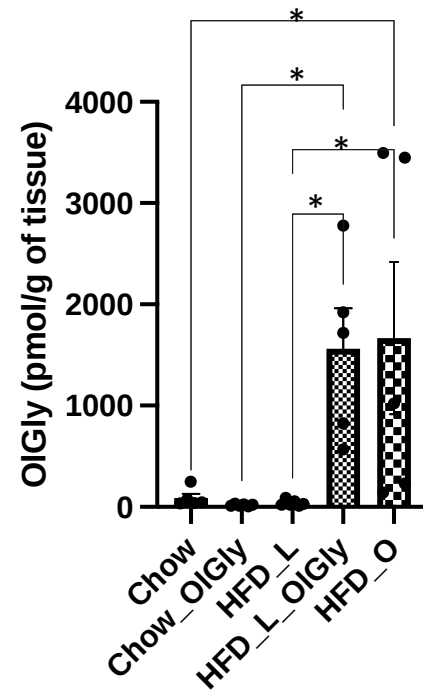
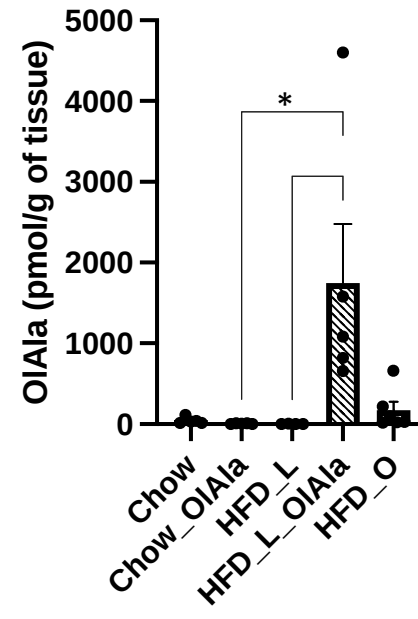


Supplementary Figure 1. Electrophysiological parameters were used to identify putative dopaminergic cells in VTA; (A-C) firing rate was between 1 and 5 Hz, and action potential duration was > 1 ms. OlGly and OlAla reduce the firing rate of putative dopaminergic neurons in the VTA via PPAR α .



Supplementary figure 2. Oleic acid derivative concentration in brain regions. (A,B) OIGly and OEA levels in the hypothalamus. (C, D) OIGly and OEA levels in the nucleus accumbens. (E-G) OIGly, OIAIa and OEA levels in the insula. (H-J) OIGly, OIAIa and OEA levels in the ventral tegmental area.

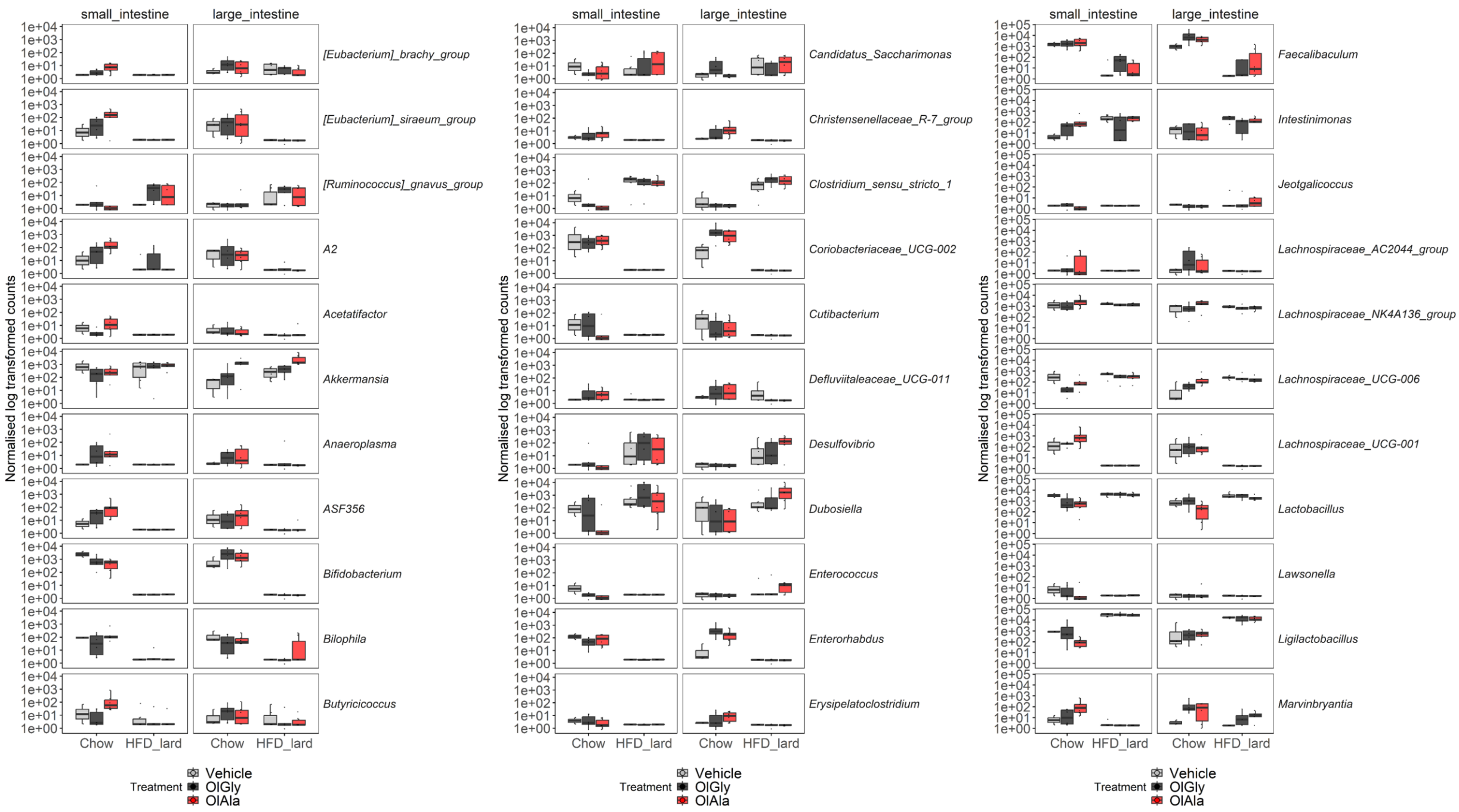
* $p < 0.05$, ** $p < 0.01$ Unpaired t-test, Chow vs HFD_L or HFD_O; # $p < 0.05$ HFD_L vs HFD_O

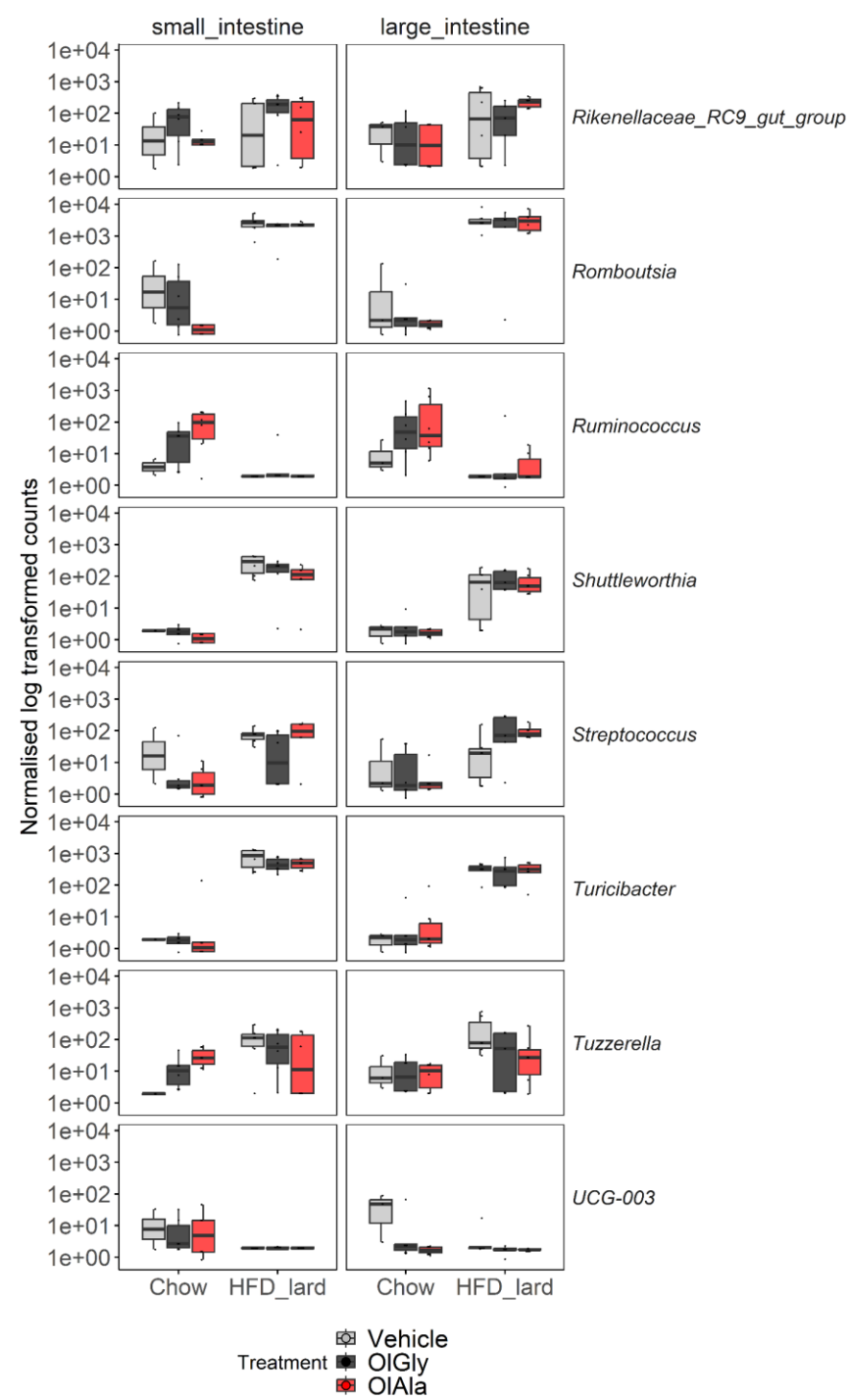
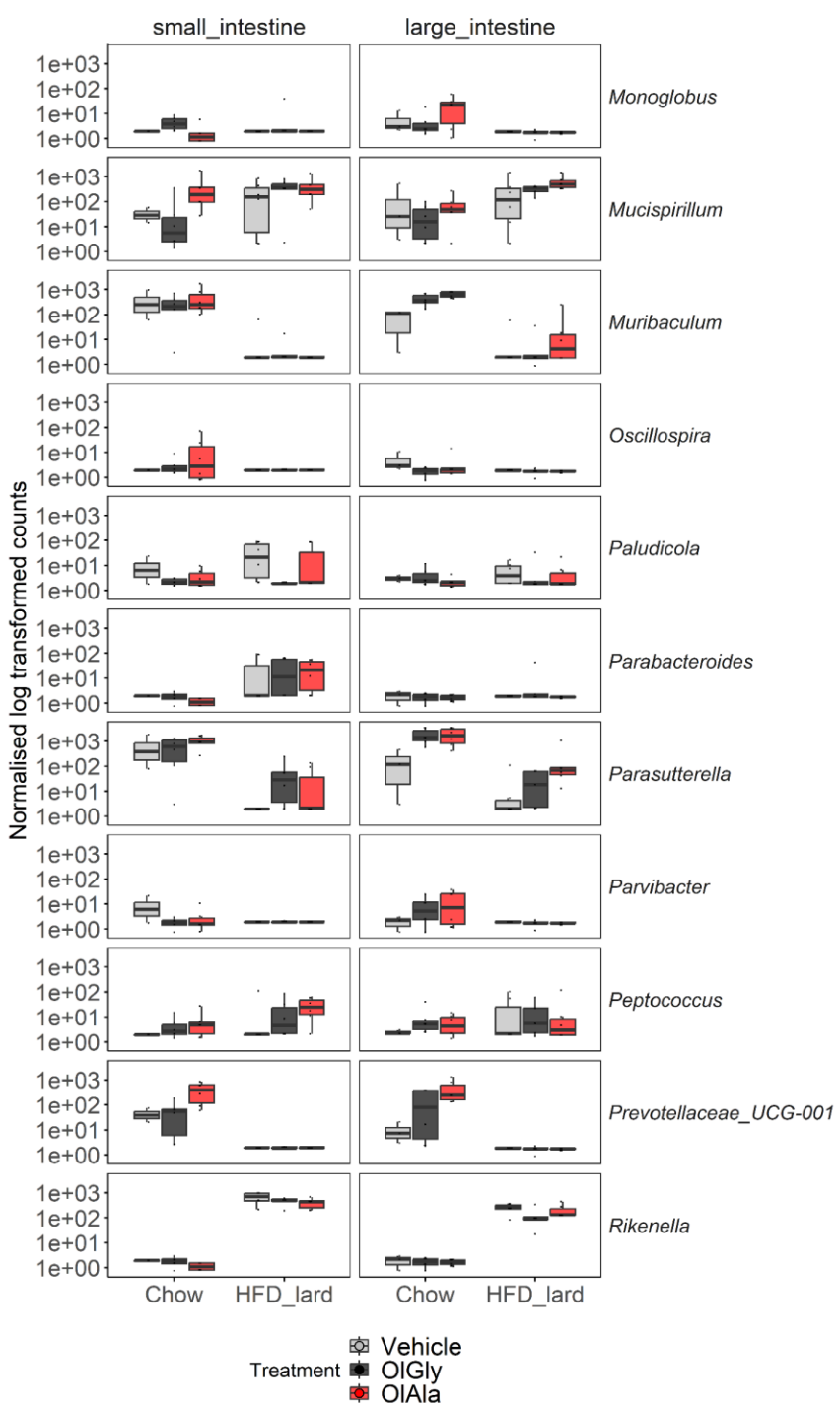
A**B**

Supplementary figure 3. Oleic acid derivative concentration in the large intestine. (A) OIGly levels expressed as pmol/g of tissue.. (B) OIAla levels expressed as pmol/g of tissue.

* $p < 0.05$, One-way ANOVA, Tukey post-hoc test

Supplementary Figure 4. (Part 1)Taxa that are significantly modulated between diets and or treatments in each gut region using DESeq analysis.





Supplementary Figure 4. (Part 2) Taxa that are significantly modulated between diets and or treatments in each gut region using DESeq analysis.