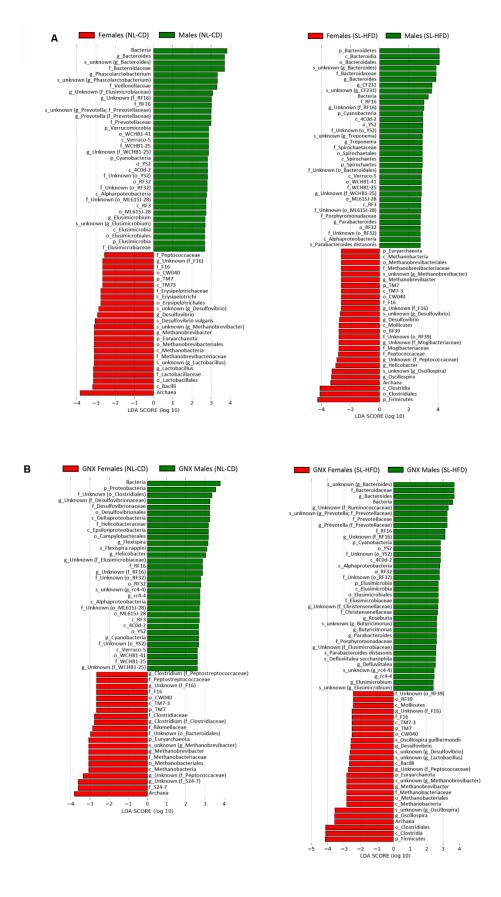
SUPPLEMENTARY FIGURES

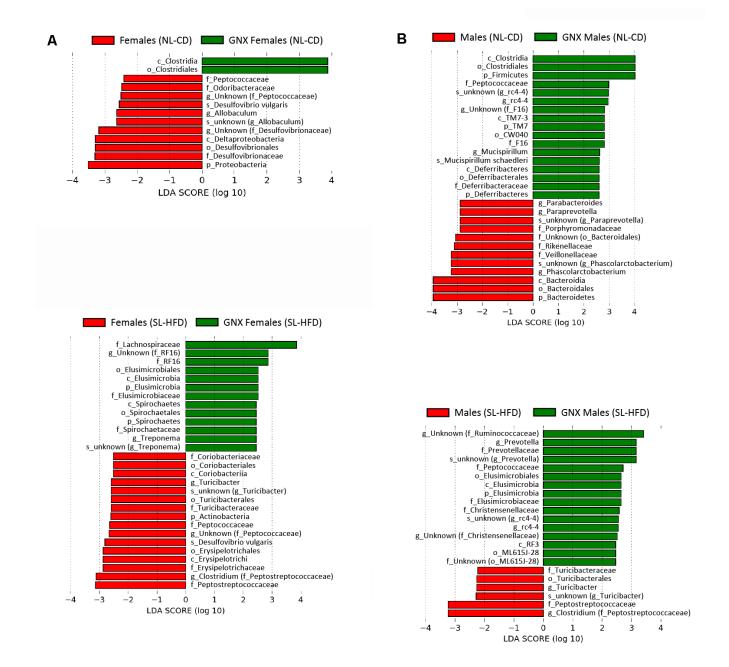
A Sex effect on alpha diversity. **GNX** animals in normal feeding GNX animals in postnatal overfeeding (NL-CD) (SL-HFD) 900 450 400 350 350 250 200 150 100 400 350 females males 250 200 150 100 50 4000 6000 8000 10000 12000 14000 16000 18000 2000 4000 6000 8000 10000 12000 14000 16000 18000 2000 -2000 -2000 Sequencing Depth Sequencing Depth Intact animals in normal feeding Intact animals in postnatal overfeeding (SL-HFD) (NL-CD) females 450 400 450 400 350 350 250 200 150 350 300 250 males males 200 150 100 100 2000 4000 6000 8000 10000 12000 14000 16000 18000 Sequencing Depth 2000 4000 6000 8000 10000 12000 14000 16000 18000 Observed otus Shannon GNX animals in normal feeding 0.495 0.834 GNX animals in postnatal overfeeding 0.294 0.753 Intact animals in normal feeding 0.027 0.016 Intact animals in postnatal overfeeding 0.021 0.027 Kruskal-Wallis statistical analysis p-values

Gonadectomy effect on alpha diversity. Females under normal feeding Females under postnatal overfeeding GNX opserved of state of the state (NL-CD) (SL-HFD) 450 400 GNX intact 350 intact 300 250 200 150 100 -2000 6000 8000 10000 12000 14000 16000 18000 Males under postnatal overfeeding Males under normal feeding (NL-CD) (SL-HFD) GNX 400 GNX 500 450 400 350 300 250 200 150 350 300 intact observed_otus intact 250 200 150 2000 4000 6000 8000 10000 12000 14000 16000 18000 Sequencing Depth -2000 2000 4000 6000 8000 10000 12000 14000 16000 18000 Shannon Observed otus Females under normal feeding Females under postnatal overfeeding 1.000 Males under normal feeding 0.046 0.027 Males under postnatal overfeeding 0.059 0.074 Kruskal-Wallis statistical analysis p-values

Supplementary Figure 1. Diversity indexes according to sex, gonadectomy and feeding conditions. (A) Sex effect on alpha diversity; (B) Gonadectomy effect on alpha diversity.



Supplementary Figure 2. Linear discriminant analysis (LDA) scores between sexes under normal feeding and overfeeding conditions, in intact (A) and gonadectomized (B) animals.



Supplementary Figure 3. Linear discriminant analysis (LDA) scores between intact and gonadectomized animals, under normal feeding and overfeeding conditions in females (A) and males (B).