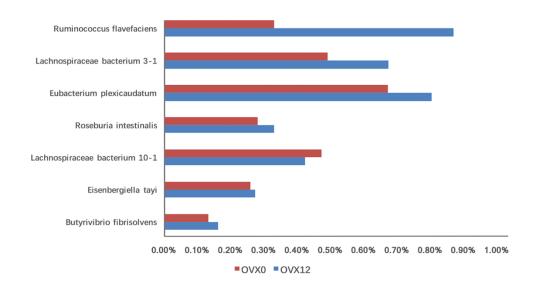
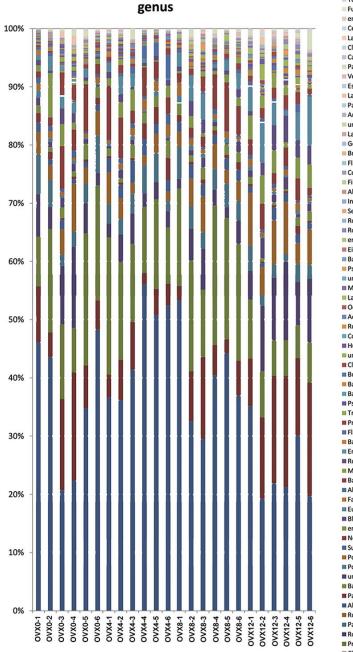
SUPPLEMENTARY FIGURES

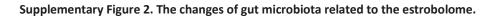


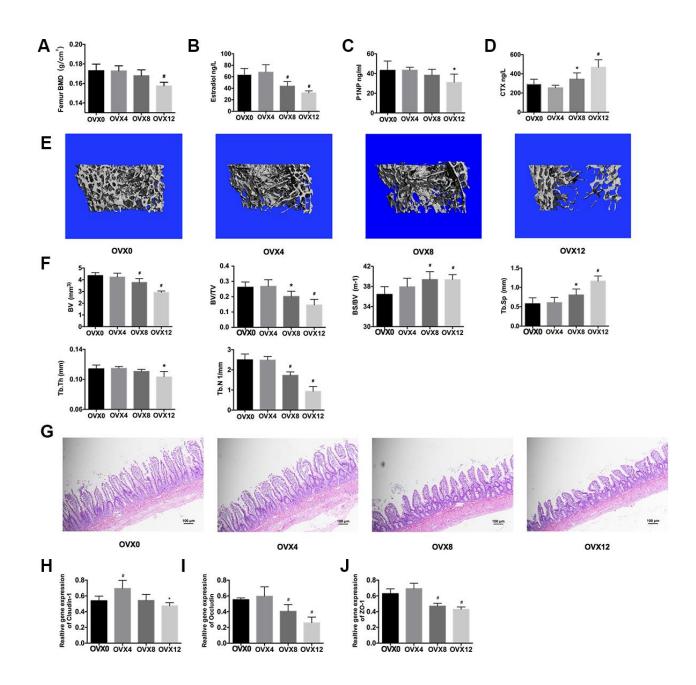
Supplementary Figure 1. Abundance with significant differences in sub-group of Clostridales at species level between pre- and twelve weeks post-ovariectomy, q<0.01.



 Turicibacter
Fusicatenibacter environmental samples <Lachnospiraceae> Cellulosilyticum Lactonifactor Clostridiaceae Caldicoprobacter Paenibacillus Verrucomicrobia Escherichia Lachnospiraceae Paludibacter Anaerosporobacter unclassified Bacteroidales Lachnoclostridium Gorillibacterium Bradyrhizobium Flavobacteriaceae Firmicutes Akkermansia Intestinimonas Sellimonas Robinsoniella Romboutsia environmental samples <Bacteria> Eisenbergiella Bacillales incertae sedis Pseudobutyrivibrio unclassified Bacteria (miscellaneous) Mahella Lactobacillus Odoribacter Actinobacteria Ruminococcaceae Coprobacter Hungatella unclassified Clostridiales (miscellaneous)
Clostridiales Butyrivibrio Bacillaceae Bacillus Pseudoflavonifractor Treponema Prevotellaceae Flavonifractor
Barnesiella Enterococcus Ruminiclostridium Marvinbryantia Bacteria Alteromonadales Faecalibacterium Eubacterium Blautia environmental samples <clostridial firmicutes> Not assigned
Subdoligranulum Porphyromonadaceae Porphyromonas unclassified Lachnospiraceae Bacteroidales Paraprevotella Alistipes Ruminococcus Parabacteroides Roseburia Prevotella Clostridium

Bacteroides





Supplementary Figure 3. Dynamic changes in biological data after ovariectomy. BMD (A), serum estradiol (B), P1NP (C), CTX (D), three-dimensional reconstruction of distal femur (E), and bone histomorphometric parameters (F): bone volume (BV), bone volume density (BV/TV), specific bone surface (BS/BV), trabecular spacing (Tb.Sp), trabecular thickness (Tb.Th), and trabecular number (Tb.N). Hematoxylin and eosin (H&E) staining of the intestine (100x) (G). mRNA expression of Claudin-1, Occludin and ZO-1 by real-time PCR (H–J). *P < 0.05, $^{\#}P < 0.01$.