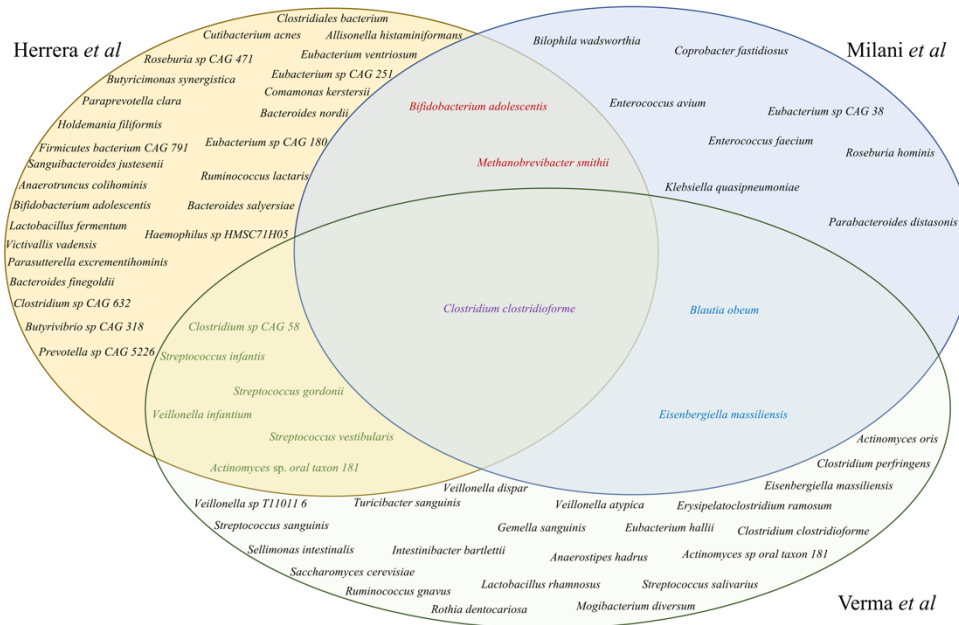
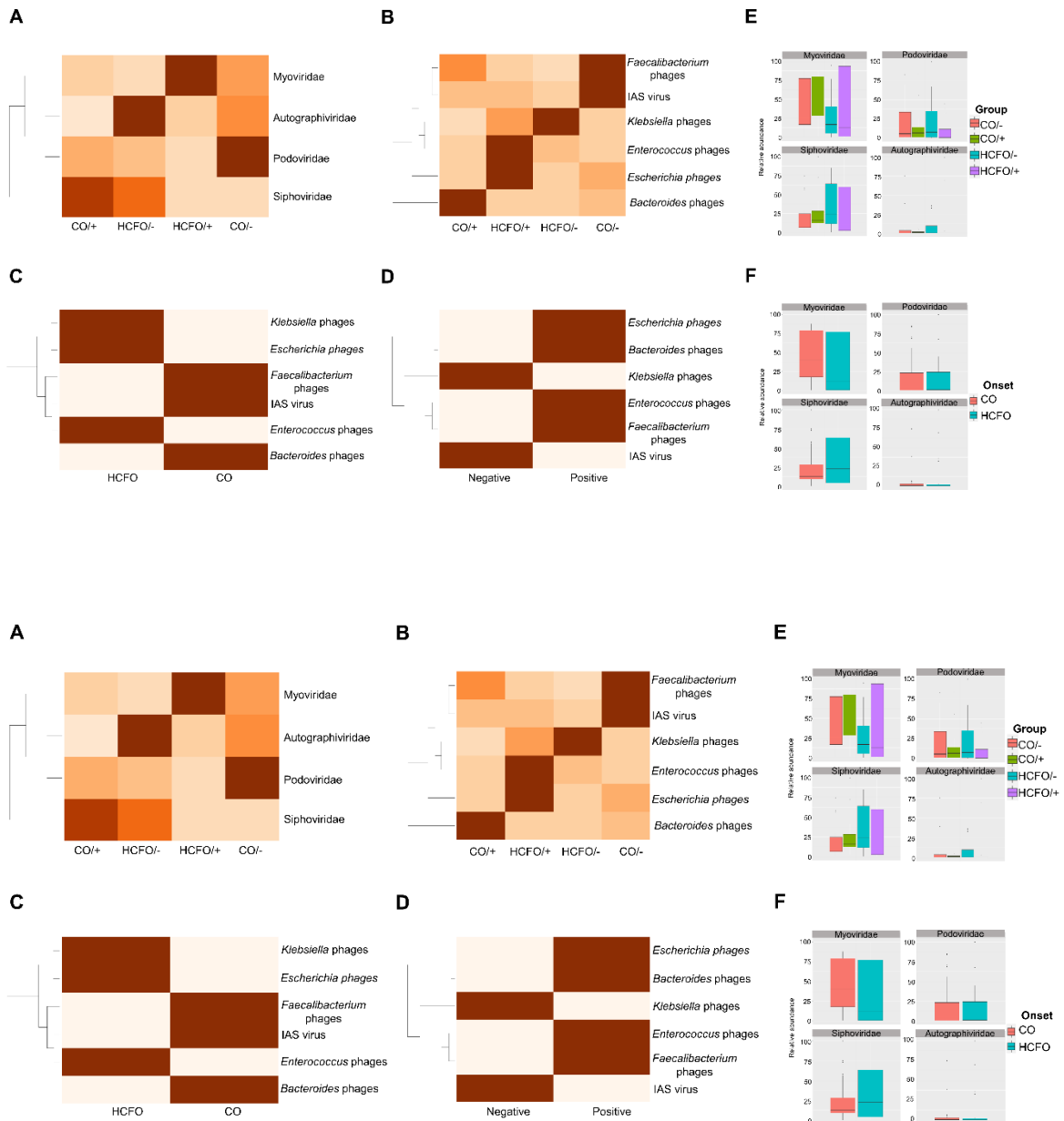


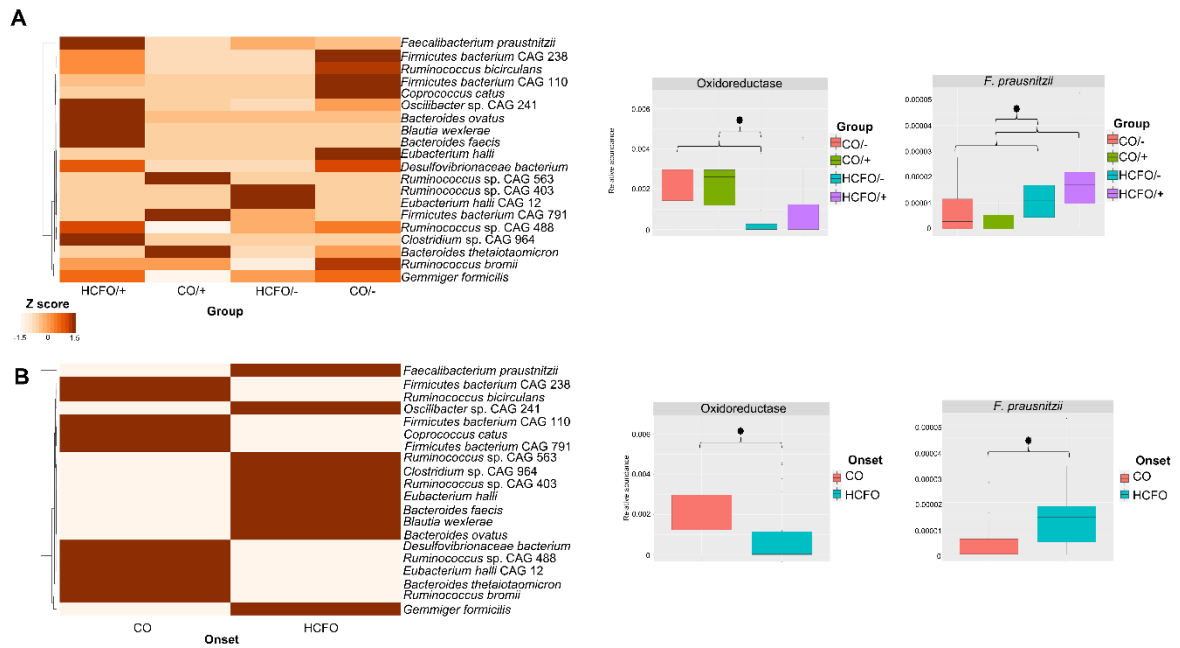
## Supplementary material



**Figure S1. Differentially abundant species with potential association to CDI and its external validation.** Venn diagram of the differentially abundant species in the CDI-positive samples compared to the negative samples from the present study and the two independent public datasets.



**Figure S2. Viral populations were related to bacterial composition.** Distribution of the main phage families and species found in the study groups. A) Heatmap of viral families by group; B) Heatmap of phage species by group. C) Heatmap of viral families by onset; D) Heatmap of phage species by onset. E and F) Box plot showing absence of differences between viral families by group and by onset.



**Figure S3. The role of *F. prausnitzii* in oxidoreductase metabolism.** A) Heatmap of the microorganisms involved in oxidoreduction by group, along with their box plots showing statistically significant differences; B) Heatmap of the microorganisms involved in oxidoreduction by onset, accompanied by box plots showing statistically significant differences.