Fecal microbiota transplant from highly feed efficient donors shows little effects on age-related changes in feed efficiency-associated fecal microbiota in chickens

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Figure 1

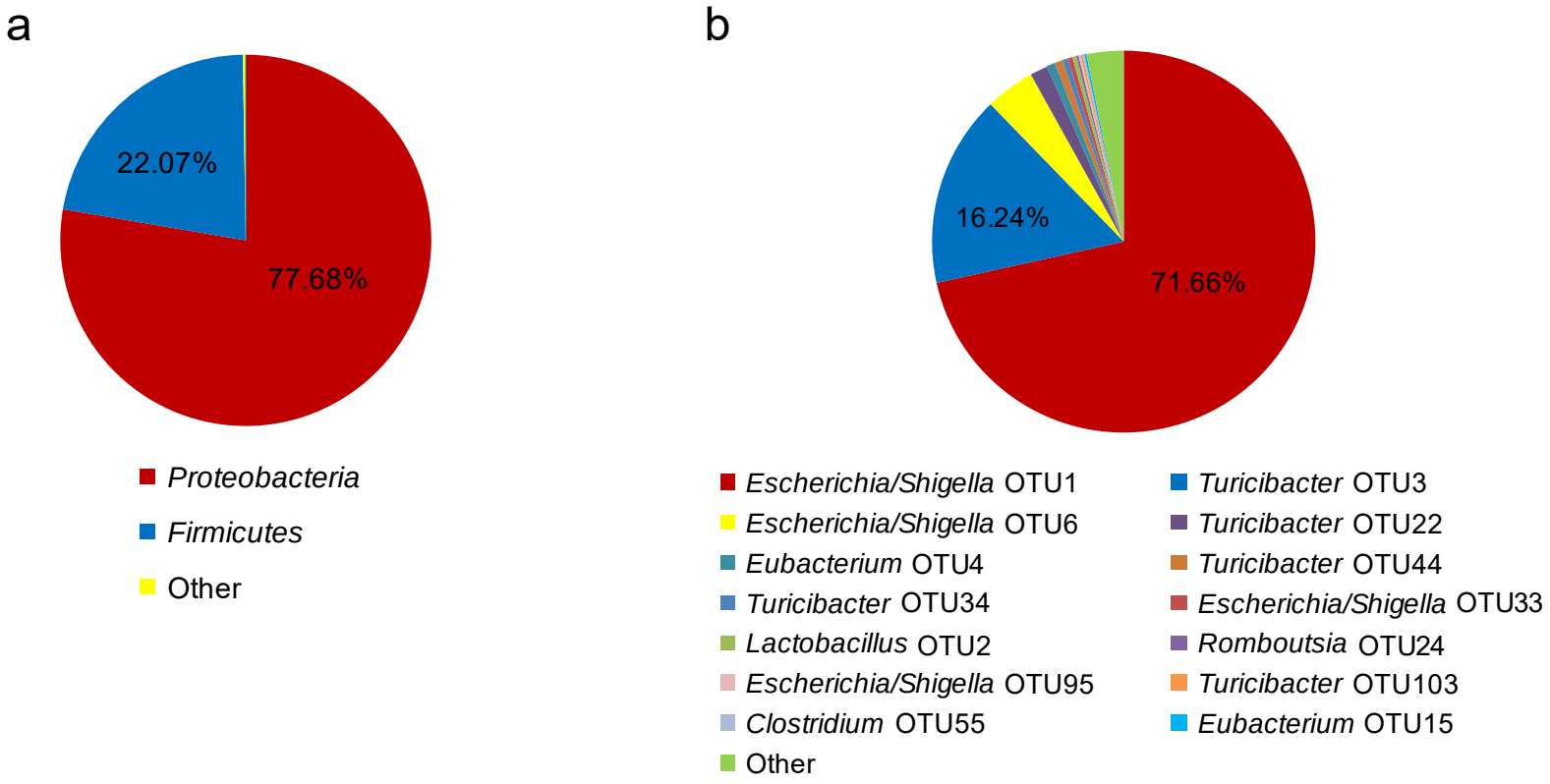

FIG 1 Bacterial composition of the fecal microbiota transplant: (a) phyla and (b) operational taxonomic units (OTUs). FMT inoculum, n = 8 (FMT inoculum of the three individual inoculation days of the two batches and pooled samples of the FMT inocula across the three inoculation days per batch).

Figure 2

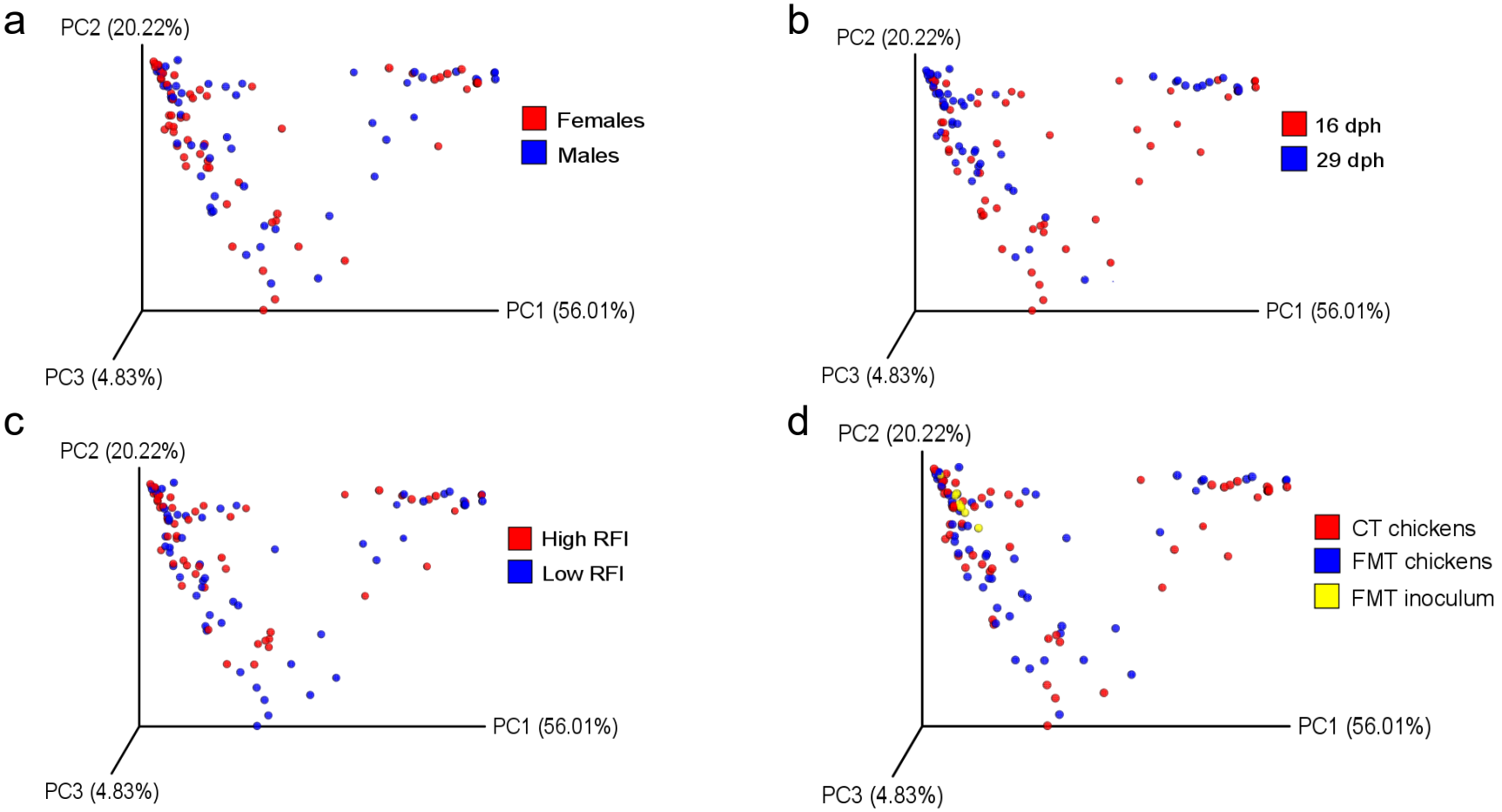

FIG 2 Principal coordinate analysis (PCoA) plot of weighted UniFrac analysis: (a) fecal samples of females and males; (b) fecal samples at 16 and 29 days post-hatch (dph); (c) fecal samples of low and high residual feed intake (RFI) broiler chickens and (d) broiler chickens receiving either a fecal microbiota transplant (FMT chickens) or a control transplant (CT chickens) and the FMT inoculum. Yellow circles in (d) represent the FMT inoculum of the different inoculation days of the two batches and pooled samples of the FMT inocula across the three inoculation days per batch.

Figure 3

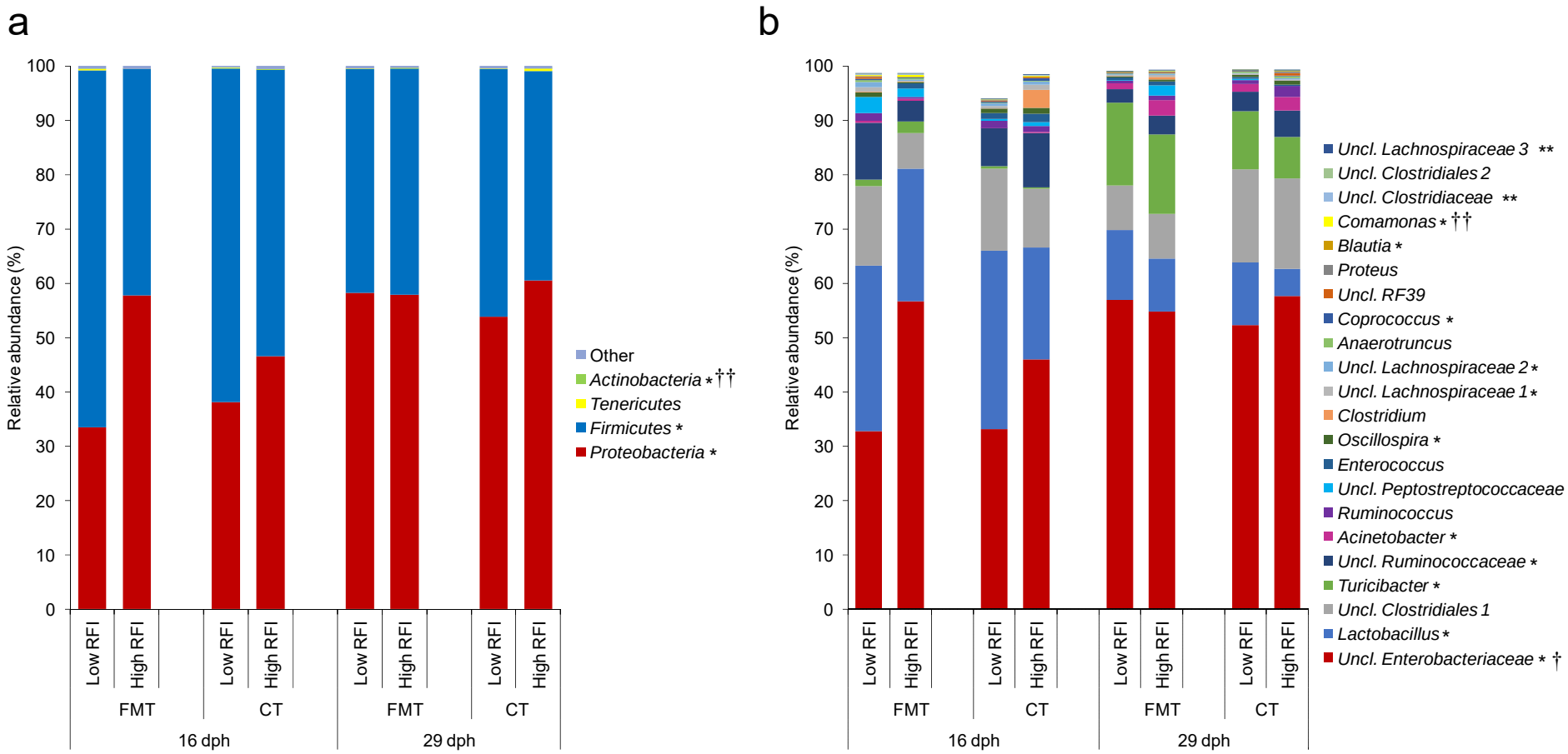

FIG 3 Relative abundances (%): (a) bacterial phyla and (b) most abundant bacterial genera (relative abundance >0.5%) in feces at 16 and 29 days post-hatch (dph) in low and high residual feed intake (RFI) broiler chickens receiving either a fecal microbiota transplant (FMT) or a control transplant (CT). * $P \leq 0.05$, effect of time point; ** $P \leq 0.10$, trend for time point effect; † $P \leq 0.10$, trend for RFI rank effect; and †† $P \leq 0.10$, trend for FMT effect. Low RFI FMT females, *n* = 8/time point; low RFI FMT males, *n* = 7/time point; high RFI FMT females, *n* = 7/time point; high RFI FMT males, *n* = 6/time point; low RFI CT females, *n* = 7/time point; low RFI CT males, *n* = 7/time point; high RFI CT females, *n* = 7/time point; high RFI CT males, *n* = 7/time point. Uncl., Unclassified.

Figure 4

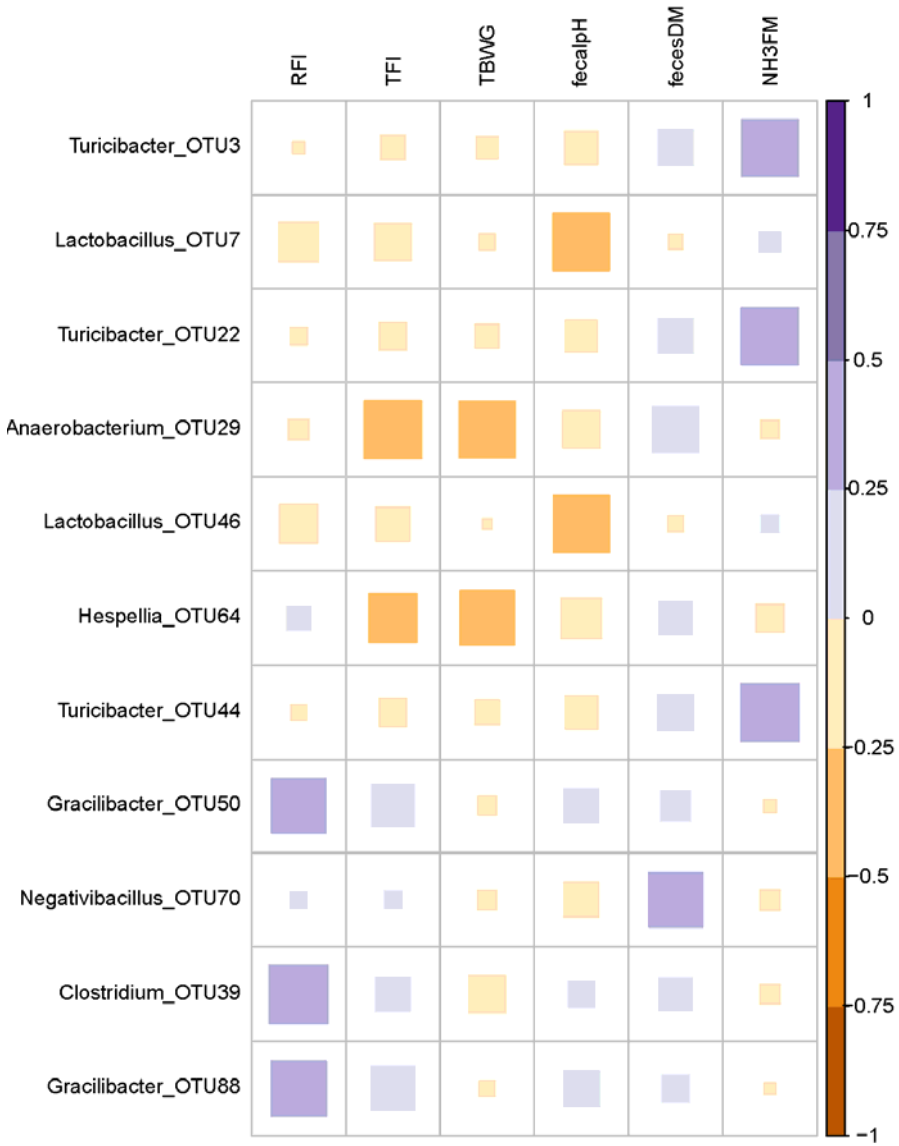

FIG 4 Correlations between operational taxonomic units (OTUs) at 29 day post-hatch and feed efficiency, performance traits and excreta characteristics. Correlations were significant ($P \leq 0.05$) if correlation coefficients were ≤-0.33 or ≥0.33. The OTUs were included in the matrix if they occurred in at least half of the chickens and if they were significant for at least one of the parameters. RFI, residual feed intake; TFI, total feed intake; TBWG, total body weight gain; DM, dry matter; NH3, ammonia; FM, fresh matter.