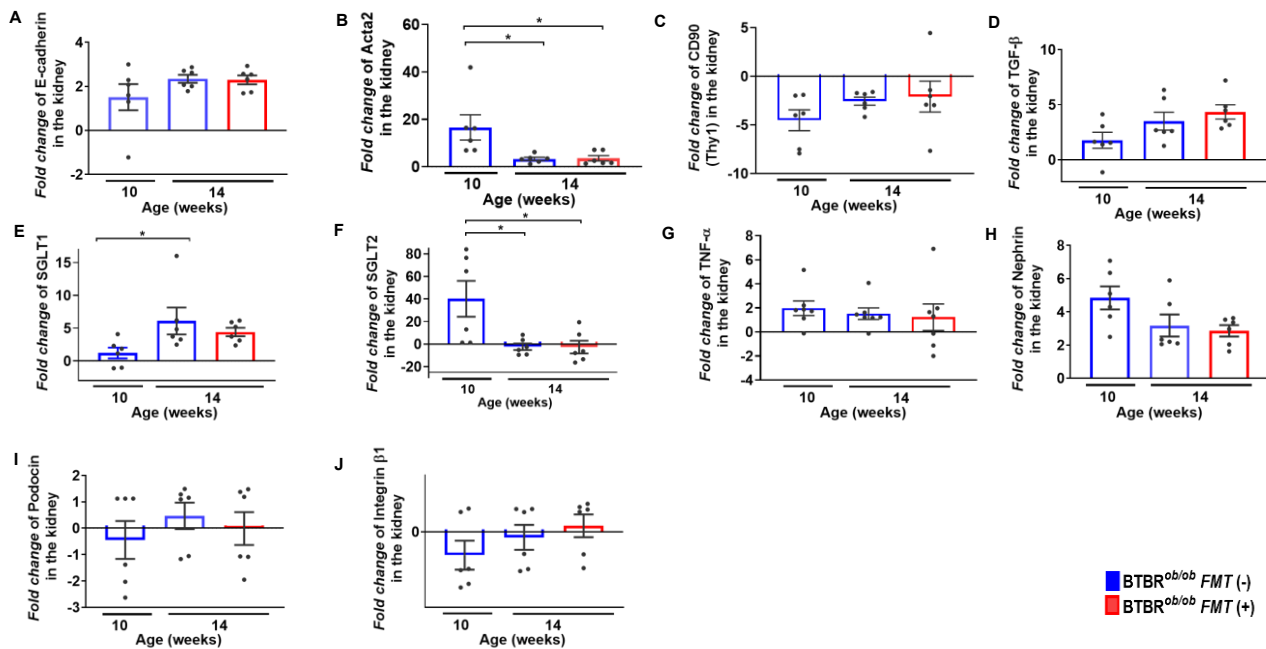


SUPPLEMENTARY MATERIAIS

RESULTS

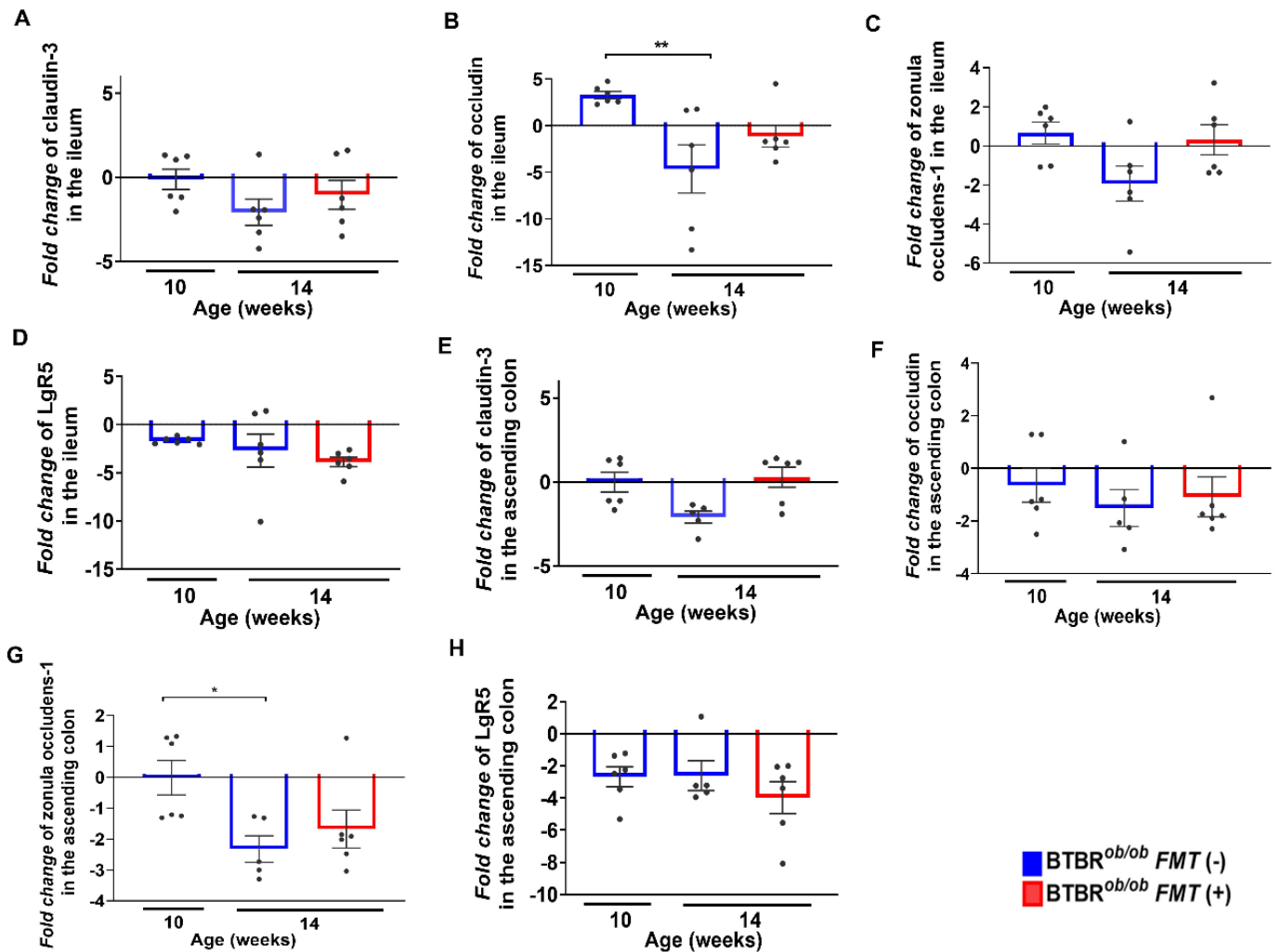
Analysis of the sequencing of the 16S rRNA

In all groups, most sequences revealed greater proportions of the *Bacteroidetes* phylum: 10-week-old BTBR WT (60.33%), 10-week-old BTBR^{ob/ob} (71.36%), 14-week-old BTBR WT (60.70%), 14-week-old BTBR FMT (-) (74.01%), and 14-week-old BTBR FMT (+) (73.44%) mice when compared to the *Firmicutes* phylum: 10-week-old BTBR WT (24.10%), 10-week-old BTBR^{ob/ob} (16.38%), 14-week-old BTBR WT (26.28%), 14-week-old BTBR FMT (-) (14.36%), and 14-week-old BTBR FMT (+) (18.78%) mice.



Supplementary Figure S1 . Gene expression of tubulointerstitial, podocyte, mesangial and inflammatory markers by qPCR in the kidney in BTBR^{ob/ob} FMT (+) and BTBR^{ob/ob} FMT (-) mice in relation to BTBR WT mice. (A) Gene expression of E-cadherin in the kidney of 10-week-old BTBR^{ob/ob} versus 14-week-old BTBR^{ob/ob} FMT (-) mice was not different ($P=0.29$) and versus 14-week-old BTBR^{ob/ob} FMT (+) ($P=0.33$) mice, and between 14-week-old BTBR^{ob/ob} FMT (+) and 14-week-old BTBR^{ob/ob} FMT (-) ($P>0.99$) mice. (B) Gene expression of alpha actin (Acta2) in the kidney of 10-week-old BTBR^{ob/ob} versus 14-week-old BTBR^{ob/ob} FMT (-) mice was significantly different ($*P=0.024$) and versus 14-week-old BTBR^{ob/ob} FMT (+) ($*P=0.033$) mice. No significant difference was found between 14-week-old BTBR^{ob/ob} FMT (-) versus 14-week-old BTBR^{ob/ob} FMT (+) ($P>0.99$) mice. (C) Gene expression of Thy-1 (CD90) did not change between BTBR^{ob/ob} mice in accordance with time and treatment: 10-week-old BTBR^{ob/ob} versus 14-week-old BTBR^{ob/ob} FMT (-) ($P=0.45$) and 14-week-old BTBR^{ob/ob} FMT (+) ($P=0.31$) mice, and 14-week-old BTBR^{ob/ob} FMT (-) versus 14-week-old BTBR^{ob/ob} FMT (+) ($P=0.95$) mice. (D) Gene expression of TGF- β in the kidney did not significantly change between 10-week-old BTBR^{ob/ob} versus 14-week-old BTBR^{ob/ob} FMT (-) ($P=0.25$) and 14-week-old BTBR^{ob/ob} FMT (+) ($P=0.06$) mice, and between 14-week-old BTBR^{ob/ob} FMT (+) versus 14-week-old BTBR^{ob/ob} FMT (-) ($P=0.70$) mice. (E) Gene expression of SGLT1 in the kidney of 10-week-old BTBR^{ob/ob} versus 14-week-old BTBR^{ob/ob} FMT (-) mice was significantly different ($*P=0.033$), but not with 14-week-old BTBR^{ob/ob} FMT (+) ($P=0.06$) mice, and between 14-week-old BTBR^{ob/ob} FMT (-) and 14-week-old BTBR^{ob/ob} FMT (+) ($P>0.99$) mice. (F) Gene expression of SGLT2 in the kidney was significantly different among 10-week-old BTBR^{ob/ob} versus 14-week-old BTBR^{ob/ob} FMT (-) ($*P=0.021$) and 14-week-old BTBR^{ob/ob} FMT (+) ($*P=0.020$) mice. No significant difference

was found between 14-week-old BTBR^{ob/ob} FMT (-) *versus* 14-week-old BTBR^{ob/ob} FMT (+) ($P=0.99$) mice. (G) Gene expression of TNF- α in the kidney did not significantly change among 10-week-old BTBR^{ob/ob} *versus* 14-week-old BTBR^{ob/ob} FMT (-) ($P=0.91$) and 14-week-old BTBR^{ob/ob} FMT (+) ($P=0.78$) mice, and between 14-week-old BTBR^{ob/ob} FMT (-) and 14-week-old BTBR^{ob/ob} FMT (-) ($P=0.96$) mice. (H) Gene expression of nephrin in the kidney showed no significant difference among 10-week-old BTBR^{ob/ob} *versus* 14-week-old BTBR^{ob/ob} FMT (-) ($P=0.19$) and 14-week-old BTBR^{ob/ob} FMT (+) ($P=0.08$) mice, and between 14-week-old BTBR^{ob/ob} FMT (-) and 14-week-old BTBR^{ob/ob} FMT (+) ($P>0.99$) mice. (I) Gene expression of podocin in the kidney showed no significant difference among 10-week-old BTBR^{ob/ob} *versus* 14-week-old BTBR^{ob/ob} mice FMT (-) ($P=0.38$) and 14-week-old BTBR^{ob/ob} FMT (+) ($P=0.64$) mice, and between 14-week-old BTBR^{ob/ob} FMT (-) and 14-week-old BTBR^{ob/ob} FMT (+) ($P>0.99$) mice. (J) Gene expression of integrin β -1 in the kidney did not significantly change among 10-week-old BTBR^{ob/o} mice *versus* 14-week-old BTBR^{ob/ob} mice FMT (-) ($P>0.99$) and 14-week-old BTBR^{ob/ob} FMT (+) ($P=0.17$) mice, and between 14-week-old BTBR^{ob/ob} FMT(-) and 14-week-old BTBR^{ob/ob} FMT (-) ($P=0.91$) mice.



Supplementary Figure S2 . Gene expression of tight junction and stem cell marker Lgr5 by qPCR in the ileum and ascending colon in BTBR^{ob/ob} FMT (+) and BTBR^{ob/ob} FMT (-) mice in relation to BTBR WT mice. (A) Gene expression of claudin-3 in the ileum of 10-week-old BTBR^{ob/ob} *versus* 14-week-old BTBR^{ob/ob} FMT (-) ($P=0.19$) and 14-week-old BTBR^{ob/ob} FMT (+) ($P=0.67$) mice, and between 14-week-old BTBR^{ob/ob} FMT (+) and 14-week-old BTBR^{ob/ob} FMT (-) ($P=0.60$) mice was not different. (B) Gene expression of occludin in the ileum of 10-week-old BTBR^{ob/ob} *versus* 14-week-old BTBR^{ob/ob} FMT (-) mice was significantly different ($**P=0.009$). However, occluding was not significantly different between 10-week-old BTBR^{ob/ob} and 14-week-old BTBR^{ob/ob} FMT (+) ($P=0.12$) mice, and between 14-week-old BTBR^{ob/ob} FMT (-) and 14-week-old BTBR^{ob/ob} FMT (+) ($P > 0.99$) mice. (C) Gene expression of zonula occludens-1 in the ileum did not significantly change among 10-week-old BTBR^{ob/o} *versus* 14-week-old BTBR^{ob/ob} FMT (-) ($P=0.07$) and 14-week-old BTBR^{ob/ob} FMT (+) ($P=0.94$) mice, and between 14-week-old BTBR^{ob/ob} FMT (+) and 14-week-old BTBR^{ob/ob} FMT (-) ($P=0.12$) mice. (D) Gene expression of Lgr5 in the ileum did not significantly change among 10-week-old BTBR^{ob/o} mice *versus* 14-week-old BTBR^{ob/ob} FMT (-) ($P>0.99$) and 14-week-old BTBR^{ob/ob} FMT (+) ($P=0.17$) mice, and between 14-week-old BTBR^{ob/ob} FMT(-) and 14-week-old BTBR^{ob/ob} FMT (-) ($P=0.91$) mice.

($P=0.76$) and 14-week-old BTBR^{ob/ob} FMT (+) ($P=0.31$) mice, and between 14-week-old BTBR^{ob/ob} FMT (+) and 14-week-old BTBR^{ob/ob} FMT (-) ($P=0.69$) mice. (E) Gene expression of claudin-3 in ascending colon did not significantly change among 10-week-old BTBR^{ob/ob} *versus* 14-week-old BTBR^{ob/ob} FMT (-) ($P=0.06$) and 14-week-old BTBR^{ob/ob} FMT (+) ($P>0.99$) mice, and between 14-week-old BTBR^{ob/ob} FMT (+) and 14-week-old BTBR^{ob/ob} FMT (-) ($P=0.06$) mice. (F) Gene expression of occludin in ascending colon showed no significant difference among 10-week-old BTBR^{ob/ob} *versus* 14-week-old BTBR^{ob/ob} FMT (-) ($P=0.78$) and 14-week-old BTBR^{ob/ob} FMT (+) ($P>0.99$) mice, and between 14-week-old BTBR^{ob/ob} FMT (+) *versus* 14-week-old BTBR^{ob/ob} FMT (-) ($P>0.99$) mice. (G) Gene expression of zonula-occludens-1 in ascending colon of 10-week-old BTBR^{ob/ob} *versus* 14-week-old BTBR^{ob/ob} FMT (-) mice was significantly different ($*P=0.025$), but was not significantly different of 14-week-old BTBR^{ob/ob} mice FMT (+) ($P=0.08$), and between 14-week-old BTBR^{ob/ob} FMT (-) and 14-week-old BTBR^{ob/ob} FMT (+) ($P>0.99$) mice. (H) Gene expression of LgR5 in ascending colon of 10-week-old BTBR^{ob/ob} *versus* 14-week-old BTBR^{ob/ob} FMT (-) ($P>0.99$) and 14-week-old BTBR^{ob/ob} FMT (+) ($P>0.99$) mice was not different, as well as between 14-week-old BTBR^{ob/ob} FMT (+) and 14-week-old BTBR^{ob/ob} FMT (-) ($P>0.99$) mice.