

Supplementary materials

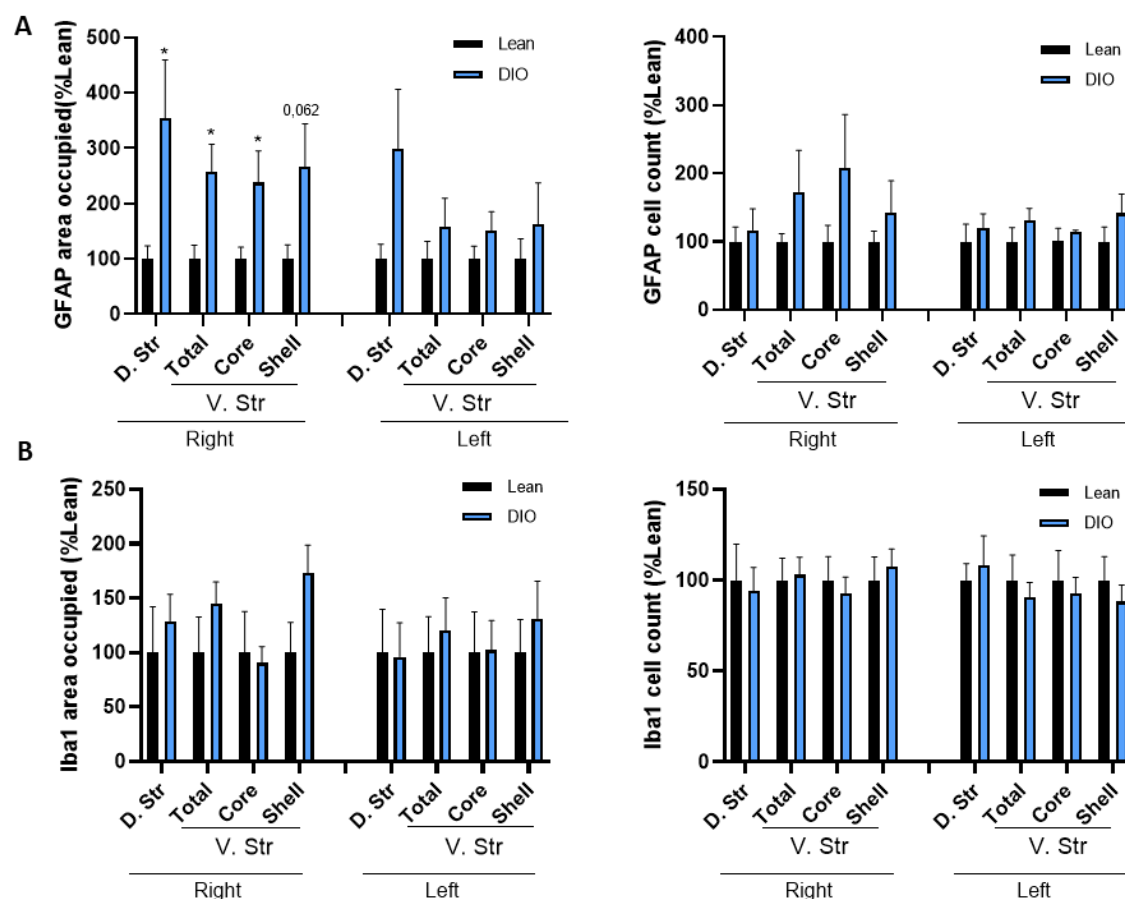


Figure S1. Details of immunofluorescence quantification. (A) Immunofluorescence quantification of the area occupied by astrocytes cells and the Gfap + cells in the right and left dorsal striatum (D. Str), total ventral striatum (V. Str total), ventral striatum core (V. Str core) and ventral striatum shell (V. Str shell) of lean and DIO mice (n=4-5/group). (B) Immunofluorescence quantification of the area occupied by microglial cells and the Iba1 + cells in the right and left dorsal striatum (D. Str), total ventral striatum (V. Str total), ventral striatum core (V. Str core) and ventral striatum shell (V. Str shell) of lean and DIO mice (n=5/group). Data are shown as mean \pm SEM. P-values were obtained after unpaired Student's t-test or non-parametric Mann-Whitney test. *: p-value <0,05 between lean vs DIO.

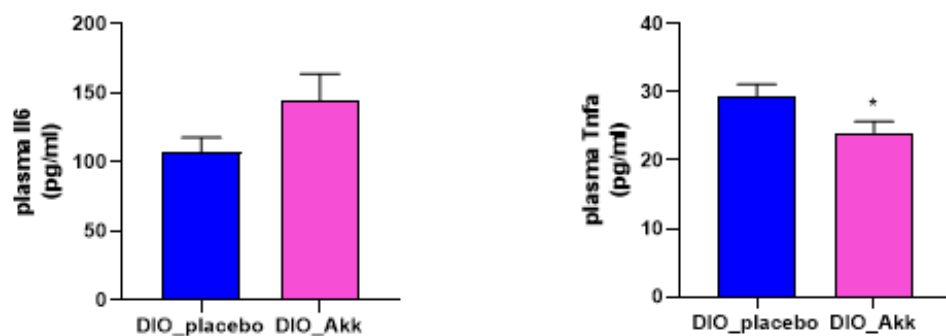


Figure S2. *Akkermansia muciniphila* administration reduces systemic inflammation. (A) Plasma concentration of the cytokines tumor necrosis factor alpha (Tnfa) and (B) interleukin-6 (Il6) measured by plasma multiplex analysis in mice treated with placebo (DIO_placebo) and *A. muciniphila* (DIO_Akk) (n=7-9/group). Data are shown as mean \pm SEM. P-values were obtained after unpaired Student's t-test or non-parametric Mann-Whitney test. *: p-value < 0,05 between DIO_placebo vs DIO_Akk.

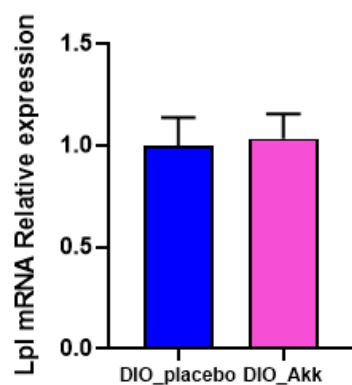


Figure S3. *Akkermansia muciniphila* administration do not influence *Lpl* expression in the jejunum. mRNA relative expression in the jejunum of lipoprotein lipase (*Lpl*) measured by qPCR in DIO mice treated with placebo (DIO_placebo) and *A. muciniphila* (DIO_Akk). (n=9/group). Data are shown as mean \pm SEM. P-values were obtained after unpaired Student's t-test.

Table S1. Primer sequences.

Target gene	Forward primer sequence (5'–3')	Reverse primer sequence (5'–3')
<i>Rpl19</i>	GAAGGTCAAAGGGAATGTGTTCA	CCTGTCTGCCTTCAGCTTGT
<i>Drd2</i>	CCAAGAACGTGAGGGCTAAG	TGAGGATGCGAAAGGAGAAG
<i>Drd1</i>	GAGCCAACCTGAAGACACC	TGACAGCATCTCCATTTCAG
<i>Th</i>	GCCAAGGACAAGCTCAGGAAC	ATCAATGGCCAGGGTGTACG
<i>Dat</i>	AAATGCTCCGTGGGACCAATG	GTCTCCCGCTCTTGAACCTC
<i>Iba1</i>	TCCTCGATGATCCCAAATACA	GTTTCTCCAGCATTCGCTTC
<i>Tlr4</i>	CCCTCAGCACTCTTGATTGC	TGCTTCTGTTCCCTTGACCCA
<i>Tlr2</i>	CACCACTGCCCCGTAGATGAA	GCCTCGGAATGCCAGCTT
<i>Gfap</i>	GCTCCAAGATGAAACCAACC	CCAGCGATTCAACCTTTCTC
<i>Cd45 (Ptprc)</i>	TGAGCACAACAGAGAATGCCC	AACACACCTGGATGATATGTGGT
<i>Il1b</i>	TCGCTCAGGGTCACAAGAAA	CATCAGAGGCAAGGAGGAAAAC
<i>Tnfa</i>	TCGAGTGACAAGCCTGTAGCC	TTGAGATCCATGCCGTTGG
<i>Il6</i>	ACAAGTCGGAGGCTTAATTACACAT	TTGCCATTGCACAACCTCTTTTC
<i>Cldn1</i>	TTCGCAAAGCACCGGGCAGATACA	GCCACTAATGTCGCCAGACCTGAAA
<i>Cldn5</i>	TCATTGACCGGGAAGCTGAA	CCGGTGTCACAGAAGTACGA
<i>Zo1</i>	TTTTTGACAGGGGGAGTGG	TGCTGCAGAGGTCAAAGTTCAAG
<i>Ocln</i>	ATGTCCGGCCGATGCTCTC	TTTGGCTGCTCTTGGGTCTGTAT
<i>Ccl2</i>	GCAGTTAACGCCCCACTCA	TCCAGCCTACTCATTGGGATCA
<i>Lpl</i>	AGACTCGCTCTCAGATGCCCT	GCTTGCCATCCTCAGTCCC
<i>Pnpla2</i>	ACAGCTCCACCAACATCCAC	AGCCCTGTTTGCACATCTCT