Figure 1. *Firmicutes/Bacteroidetes* ratio of HFS diet-fed rats supplemented or not with *trans*-resveratrol and quercetin for 6 weeks. Results are expressed as mean ± SEM of the relative abundance (% of total 16 S rDNA) of each phylum. HFS, high-fat sucrose diet fed control rats; RSV, supplemented with 15 mg/kg BW/day of *trans*-resveratrol; Q, supplemented with 30 mg/kg BW/day of quercetin; RSV + Q, supplemented with a combination of *trans*-resveratrol and quercetin at the same doses.
Figure 2. Relative bacterial composition at family level (% of total 16S rDNA) in faeces of HFS diet-fed rats supplemented or not with trans-resveratrol and quercetin for 6 weeks. All data are displayed on a relative scale based on the 16S rDNA frequency taxa. HFS, high-fat sucrose diet; RSV, supplemented with trans-resveratrol 15 mg/kg BW/ day; Q, supplemented with quercetin 30 mg/kg BW/day; RSV+Q, supplemented with a combination of trans-resveratrol + quercetin at the same doses.
Figure 3. Relative abundance (% of total 16S rDNA) of bacterial species significantly different from the HFS diet-fed control rats. Results are expressed as the mean ± SEM. Statistical analyses were performed using Kruskal-Wallis followed by Mann Whitney U test and p values were corrected with the Bonferroni test. *p < 0.05 after correction with the Bonferroni multiple comparison test. NS, non-significant values after Kruskal-Wallis comparison test. $p < 0.05$, HFS vs RSV; $^\#p < 0.05$, HFS vs Q; $^\$p < 0.05$, HFS vs RSV+ Q. HFS, high-fat sucrose diet; RSV, supplemented with trans-resveratrol 15 mg/kg BW/day; Q, supplemented with quercetin 30 mg/kg BW/day; RSV+Q, supplemented with a combination of trans-resveratrol + quercetin at the same doses.
Figure 4. Relative abundance (% of total 16S rDNA) of *Eubacterium cylindroides* in faeces of HFS diet-fed rats supplemented or not with trans-resveratrol and quercetin for 6 weeks. Results are expressed as the mean ± SEM. Statistical analyses were performed using Kruskal-Wallis followed by Mann Whitney U test and p values were corrected with the Bonferroni test. $p < 0.05$, HFS vs Q after correction with the Bonferroni multiple comparison test. HFS, high-fat sucrose diet; RSV, supplemented with trans-resveratrol 15 mg/kg BW/day; Q, supplemented with quercetin 30 mg/kg BW/day; RSV+Q, supplemented with a combination of trans-resveratrol + quercetin at the same doses.
Figure 5. Relative abundance (% of total 16S rDNA) of *Akkermansia muciniphila* ATCC BAA-835 in faeces of HFS diet-fed control rats supplemented or not with trans-resveratrol and quercetin for 6 weeks. Results are expressed as the mean ± SEM. Statistical analyses were performed using Kruskal-Wallis followed by Mann Whitney U test and *p* values were corrected with the Bonferroni test. HFS, high-fat sucrose diet; RSV, supplemented with trans-resveratrol 15 mg/kg BW/day; Q, supplemented with quercetin 30 mg/kg BW/day; RSV+Q, supplemented with a combination of trans-resveratrol + quercetin at the same doses.
Figure 6. Relative abundance (% of total 16S rDNA) of bacterial species in faeces of HFS diet-fed control rats supplemented or not with *trans*-resveratrol and quercetin for 6 weeks. Results are expressed as the mean ± SEM. Statistical analyses were performed using Kruskal-Wallis followed by Mann Whitney *U* test and *p* values were corrected with the Bonferroni test. HFS, high-fat sucrose diet; RSV, supplemented with *trans*-resveratrol 15 mg/kg BW/ day; Q, supplemented with quercetin 30 mg/kg BW/day; RSV+Q, supplemented with a combination of *trans*-resveratrol + quercetin at the same doses.
Figure 7. Relative mRNA expression of inflammation-related genes in colonic mucosa. Results are expressed as the mean ± SEM. Statistical analyses were performed using Kruskal-Wallis followed by Mann Whitney U test.*p <0.05, HFS vs RSV; $p$ <0.05, HFS vs Q. TNFα, tumor necrosis factor α; TLR2, Toll-like receptor 2; TLR4, Toll-like receptor 4; LBP, Lipopolysaccharide binding protein; NFκB, Nuclear factor kappa B; IL-18, Interleukin 18; MyD88, Myeloid differentiation primary response 88; NKGd2, Killer cell lectin-like receptor subfamily K, member 1; HFS, high-fat sucrose diet; RSV, supplemented with trans-resveratrol 15 mg/kg BW/ day; Q, supplemented with quercetin 30 mg/kg BW/day; RSV+Q, supplemented with a combination of trans-resveratrol + quercetin at the same doses.
Figure 8. Relative mRNA expression of tight-junction proteins and occluding in colon. Results are expressed as the mean ± SEM. Statistical analyses were performed using Kruskal-Wallis followed by Mann Whitney U test. *p < 0.05, HFS vs RSV; #p < 0.05, HFS vs RSV+Q. TJP-1, tight-junction protein-1; TJP-2, tight-junction protein-2; Ocln, occludin; HFS, high-fat sucrose diet; RSV, supplemented with trans-resveratrol 15 mg/kg BW/day; Q, supplemented with quercetin 30 mg/kg BW/day; RSV+Q, supplemented with a combination of trans-resveratrol + quercetin at the same doses.