

Table S1. The compositions and heat ratio of the experimental diets.

| Ingredient | Diets Compositions (g/100g) | | | | |
|--|-----------------------------|-------|-------|-------|-----------|
| | CON | HFD | FIDF | FSDF | FIDF+FSDF |
| Casin | 18.96 | 25.85 | 25.85 | 25.85 | 25.85 |
| L-Cystine | 0.28 | 0.39 | 0.39 | 0.39 | 0.39 |
| Corn Starch | 47.98 | 0.00 | 0.00 | 0.00 | 0.00 |
| Maltodextrin | 11.85 | 16.15 | 16.15 | 16.15 | 16.15 |
| Sucrose | 6.52 | 8.89 | 8.89 | 8.89 | 8.89 |
| Cellulose | 4.74 | 6.46 | 0.00 | 0.00 | 0.00 |
| FIDF | 0.00 | 0.00 | 6.46 | 0.00 | 3.23 |
| FSDF | 0.00 | 0.00 | 0.00 | 6.46 | 3.23 |
| Soybean Oil | 2.37 | 3.23 | 3.23 | 3.23 | 3.23 |
| Lard | 1.90 | 31.66 | 31.66 | 31.66 | 31.66 |
| Mineral Mix S10026 | 0.95 | 1.29 | 1.29 | 1.29 | 1.29 |
| Dicalcium Phosphate | 1.23 | 1.68 | 1.68 | 1.68 | 1.68 |
| Calcium Carbonate | 0.52 | 0.71 | 0.71 | 0.71 | 0.71 |
| Potassium Citrate, 1 H ₂ O | 1.56 | 2.13 | 2.13 | 2.13 | 2.13 |
| Vitamin Mix V10001 | 0.95 | 1.29 | 1.29 | 1.29 | 1.29 |
| Choline Bitartrate | 0.19 | 0.26 | 0.26 | 0.26 | 0.26 |
| Diets Heat Ratio (%) | | | | | |
| | CON | HFD | FIDF | FSDF | FIDF+FSDF |
| Protein | 20 | 20 | 20 | 20 | 20 |
| Carbohydrate | 70 | 20 | 20 | 20 | 20 |
| Fat | 10 | 60 | 60 | 60 | 60 |

CON diet adopted the XTCON50J formulation with energy density of 3.85 kcal/g; HFD diet adopted the XTHF60 formulation with energy density of 5.24 kcal/g; FIDF, FSDF and FIDF+FSDF diet were mainly based upon the XTHF60 formulation with energy density of 5.24 kcal/g. CON, control group; HFD, high-fat diet group; FIDF, group supplemented with FIDF alone; FSDF, group supplemented with FSDF alone; MIX, group supplemented with FIDF and FSDF together.

Table S2. Effects of FIDF and FSDF administration on obesity-related parameters.

| Variables | CON | HFD | FIDF | FSDF | MIX |
|---|-----------------------|-----------------|----------------------|----------------------|----------------------|
| Final body weight (g) | 27.13 ± 0.54 **** | 41.97 ± 4.31 | 42.57 ± 3.57 ns | 33.15 ± 1.36 **** | 37.29 ± 3.56 * |
| Total Energy Intake During Treatment (kcal) | 419.66 ± 5.35 *** | 557.80 ± 0.94 | 541.47 ± 10.69 ns | 531.16 ± 5.92 ns | 548.73 ± 10.14 ns |
| Energy Efficiency During Treatment (g/kcal) | 0.0654 ± 0.0008 ** | 0.0753 ± 0.0001 | 0.0786 ± 0.0002 ns | 0.0624 ± 0.0007 ** | 0.0679 ± 0.0001 * |
| UA (umol/L) | 114.65 ± 22.49 ns | 118.8 ± 19.61 | 100.95 ± 8.65 ns | 95.42 ± 8.28 ns | 97.35 ± 9.82 ns |
| ALT (U/L) | 480.33 ± 32.75 *** | 561.32 ± 23.19 | 560.53 ± 31.36 ns | 551.80 ± 28.71 ns | 545.23 ± 24.22 ns |
| AST (U/L) | 191.32 ± 17.33 ns | 225.38 ± 29.84 | 206.583 ± 21.73 ns | 174.22 ± 30.36 ** | 174.68 ± 17.82 ** |

CON, control group; HFD, high-fat diet group; FIDF, group supplemented with FIDF alone; FSDF, group supplemented with FSDF alone; MIX, group supplemented with FIDF and FSDF together. Data are expressed as mean ± SEM ($n = 6$). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.0001$, **** $p < 0.0001$, ns, not significant; compared with the HFD mice.

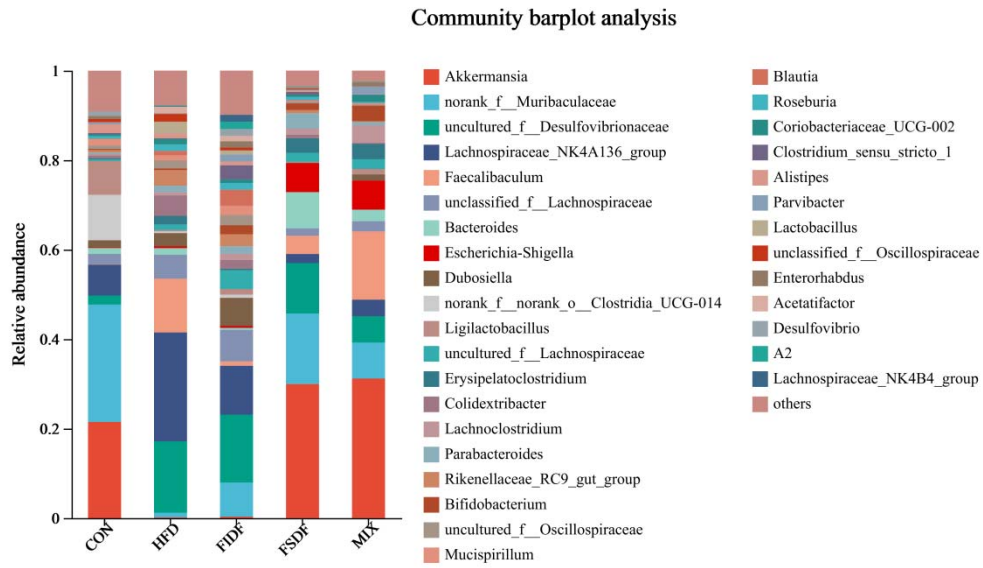


Figure S1. Effects of FIDF and FSDF administration on intestinal flora composition at the genus level. CON, control group; HFD, high-fat diet group; FIDF, supplementation with FIDF alone group; FSDF, supplementation with FSDF alone group; MIX, supplementation with FIDF and FSDF together group.