Supplementary Table 1. Composition of the four diets used in this study

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Control Diet  (D10012G) | | Control Diet with 2% Myo-inositol added  (D14081808) | | HFD  (D12451) | | HFD with 2% Myo-inositol added  (D14081809) | |
|  | gm | Kcal% | gm | Kcal% | gm | Kcal% | gm | Kcal% |
| Protein | 20 | 20 | 20 | 20 | 24 | 20 | 23 | 20 |
| Carbohydrate | 64 | 64 | 63 | 64 | 41 | 35 | 41 | 35 |
| Fat | 7.0 | 16 | 7 | 16 | 24 | 45 | 23 | 45 |
| Total |  | 100 |  | 100 |  | 100 |  | 100 |
| Kcal/gm | 4.0 |  | 3.9 |  | 4.7 |  | 4.6 |  |
| Ingredient |  |  |  |  |  |  |  |  |
| Casein | 200 | 800 | 200 | 800 | 200 | 800 | 200 | 800 |
| L-Cystine | 3 | 12 | 3 | 12 | 3 | 12 | 3 | 12 |
| Corn Starch | 397 | 1590 | 397 | 1590 | 72.8 | 291 | 72.8 | 291 |
| Maltodextrin 10 | 132 | 528 | 132 | 528 | 100 | 400 | 100 | 400 |
| Sucrose | 100 | 400 | 100 | 400 | 172.8 | 691 | 172.8 | 691 |
| Cellulose | 50 | 0 | 50 | 0 | 50 | 0 | 50 | 0 |
| Soybean Oil | 70 | 630 | 70 | 630 | 25 | 225 | 25 | 225 |
| Lard |  |  |  |  | 177.5 | 1598 | 177.5 | 1598 |
| Mineral Mix S10026 | 35 | 0 | 35 | 0 | 10 | 0 | 10 | 0 |
| DiCalcium Phosphate | 0 | 0 | 0 | 0 | 13 | 0 | 13 | 0 |
| Calcium Carbonate | 0 | 0 | 0 | 0 | 5.5 | 0 | 5.5 | 0 |
| Potassium Citrate, 1 H2O | 0 | 0 | 0 | 0 | 16.5 | 0 | 16.5 | 0 |
| Vitamin Mix V10001 | 10 | 40 | 10 | 40 | 10 | 40 | 10 | 40 |
| Choline Bitartrate | 2.5 | 0 | 2.5 | 0 | 2 | 0 | 2 | 0 |
| Myo-inositol | 0 |  | 20.4 | 0 | 0 | 0 | 17.51 | 0 |
| FD&C Yellow Dye #5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FD&C Red Dye #40 | 0 | 0 | 0 | 0 | 0.05 | 0 | 0.025 | 0 |
| FD&C Blue Dye #1 | 0 | 0 | 0.05 | 0 | 0 | 0 | 0.025 | 0 |
| Total | 1000 | 4000 | 1020.45 | 4000 | 858.15 | 4057 | 875.66 | 4057 |
| Myo-inositol (g/kg) | 0 |  | 20 |  | 0 |  | 20 |  |

Supplementary Table 2. Fatty acid composition of the diets used in this study.

|  |  |  |
| --- | --- | --- |
| **Ingredient (g)** | AIN-93G (Control Diet)1 | D12451 (High Fat Diet)1 |
| Lard | 0 | 177.5 |
| Soybean Oil | 70 | 25 |
| **Total** | 70 | 202.5 |
| C2, Acetic | 0 | 0 |
| C4, Butyric | 0 | 0 |
| C6, Caproic | 0 | 0 |
| C8, Caprylic | 0 | 0 |
| C10, Capric | 0 | 0.1 |
| C12, Lauric | 0 | 0.2 |
| C14, Myristic | 0 | 2.0 |
| C14:1, Myristoleic | 0 | 0 |
| C15 | 0 | 0.1 |
| C16, Palmitic | 7.3 | 36.9 |
| C16:1, Palmitoleic | 0 | 2.4 |
| C16:2 | 0 | 0 |
| C16:3 | 0 | 0 |
| C16:4 | 0 | 0 |
| C17 | 0 | 0.7 |
| C17:1 | 0 | 0 |
| C18, Stearic | 2.7 | 19.8 |
| C18:1, Oleic | 17.0 | 64.4 |
| C18:2, Linoleic | 37.5 | 56.7 |
| C18:3, Linolenic | 5.5 | 4.3 |
| C18:4, Stearidonic | 0 | 0 |
| C20, Arachidonic | 0 | 0.3 |
| C20:1 | 0 | 1.1 |
| C20:2 | 0 | 1.4 |
| C20:3 | 0 | 0.2 |
| C20:4, Arachidonic | 0 | 0.5 |
| C20:5, Eicosapentaenoic | 0 | 0 |
| C21:5 | 0 | 0 |
| C22, Behenic | 0 | 0 |
| C22:1, Erucic | 0 | 0 |
| C22:4, Clupanodonic | 0 | 0 |
| C22:5, Docosapentaenoic | 0 | 0.2 |
| C22:6, Docosahexaenoic | 0 | 0 |
| C24, Lignoceric | 0 | 0 |
| C24:1 | 0 | 0 |
| **Total (g)** | 69.9 | 191.3 |
| Saturated (g/%) | 9.9 (14.2%) | 60.0 (31.4%) |
| Monosaturated (g/%) | 17.0 (24.3%) | 68.0 (35.5%) |
| Polyunsaturated (g/%) | 42.9 (61.4%) | 63.3 (33.1%) |

1Fatty acid composition remained constant in the diets with MI added.

Supplementary Table 3. Taqman probes used for adipose gene expression analysis

|  |  |
| --- | --- |
| **Gene** | **Taqman gene expression assay code** |
| *Ir* | Mm01211875\_m1 |
| *Irs1* | Mm01278327\_m1 |
| *Igf1r* | Mm00802831\_m1 |
| *Akt2* | Mm02026778\_g1 |
| *Slc2a4* | Mm00436615\_m1 |
| *Pck1* | Mm01247058\_m1 |
| *Lepr* | Mm00440181\_m1 |
| *G6pc* | Mm00839363\_m1 |
| *Fas* | Mm01204974\_m1 |
| *Pparγ* | Mm00440940\_m1 |
| *Ccr5* | Mm01963251\_s1 |
| *Nlrp3* | Mm00840904\_m1 |
| *Nfkb* | Mm00479807\_m1 |
| *Il1b* | Mm00434228\_m1 |
| *Cd11c* | Mm00498701\_m1 |
| *Tnf* | Mm00443258\_m1 |
| *Mcp-1* | Mm00441242\_m1 |
| *Il-6* | Mm00446190\_m1 |
| *Angptl4* | Mm00480431\_m1 |

Supplementary Figure 1. No differences in gut permeability were observed across groups.

Mice were dosed with 600 mg/kg FITC-D after five hours fasting on GD18.5, and concentrations one hour later, at cull, were measured by fluorescence spectrophotometry.

Data presented as mean ± SEM; *n* = 8–12 mice per group.

Supplementary Figure 2. Genes examined in gonadal adipose tissue in which no differences in expression were observed

Assessed by qPCR.

Data expressed as mean ± SEM; *n* = 6 –10 mice per group.