Table S1 Diet compositions of Normal, Model, IDF-Low and IDF-High groups.

Groups	Normal		Model		IDF-Low		IDF-High	
kcal% composition	kcal%		kcal%		kcal%		kcal%	
Protein	20		20		20		20	
Carbohydrate	70		20		20		20	
Fat	10		60		60		60	
Total	100		100		100		100	
Ingredient	g	kcal	g	kcal	g	kcal	g	kcal
Casein, 30 Mesh	200	800	200	800	200	800	200	800
L-Cystine	3	12	3	12	3	12	3	12
Corn Starch	506.2	2024.8	0	0	0	0	0	0
Maltodextrin 10	125	500	125	500	125	500	125	500
Sucrose	68.8	275.2	68.8	275	68.8	275	68.8	275
Cellulose, BW200	50	0	50	0	50	0	50	0
Soybean Oil	25	225	25	225	25	225	25	225
Lard	20	180	245	2205	245	2205	245	2205
Mineral Mix S10026	10	0	10	0	10	0	10	0
DiCalcium Phosphate	13	0	13	0	13	0	13	0
Calcium Carbonate	5.5	0	5.5	0	5.5	0	5.5	0
Potassium Citrate, 1 H_2O	16.5	0	16.5	0	16.5	0	16.5	0
Vitamin Mix V10001	10	40	10	40	10	40	10	40
Choline Bitartrate	2	0	2	0	2	0	2	0
IDF from *L. japonica*					19.84	0	40.73	0
Total	1055.05	4057	773.85	4057	793.64	4057	814.58	4057
kcal/g		3.85		5.24		5.21		5.18

Table S2 Food and energy intake of Normal, Model, IDF-Low and IDF-High groups (mean ± SD).

Groups	Normal	Model	IDF-Low	IDF-High
Food intake [g/d/mouse]	2.87±0.27	2.31±0.33	2.29±0.32	2.36±0.21
Energy intake [kcal/d/mouse]	11.01±1.05	12.13±1.75	11.94±1.67	12.21±1.09

Fourier transform infrared (FT-IR) analysis of IDF

The IDF sample was ground in a mortar, blended with dried KBr, and pressed into pellets, followed by FT-IR analysis at 400 cm^{-1} to 4000 cm^{-1} using an FT-IR spectrometer (Tansor27, BRUKER, Germany).

As can be seen in Fig.S1, peaks at 3410 cm^{-1} and 2927 cm^{-1} were likely caused by the stretching vibration of –OH and C–H, respectively, which were related to the intra- and intermolecular hydrogen bonds of the sugar unit of IDF.[1] IDF presented intense absorption bands at 1642 cm^{-1} (COO−asymmetric stretching vibration of alginate carboxyl groups) and 1408 cm^{-1} (COO−symmetric stretching vibrations of carboxyl groups).[2] The band at ~1248 cm^{-1} (S=O stretching) suggested the presence of sulfate in IDF.[3] In addition, the peak at 1033 cm^{-1} was assigned to the skeletal mode vibrations of α-1,4 glycosidic linkages due to C–O–C stretching.[4]

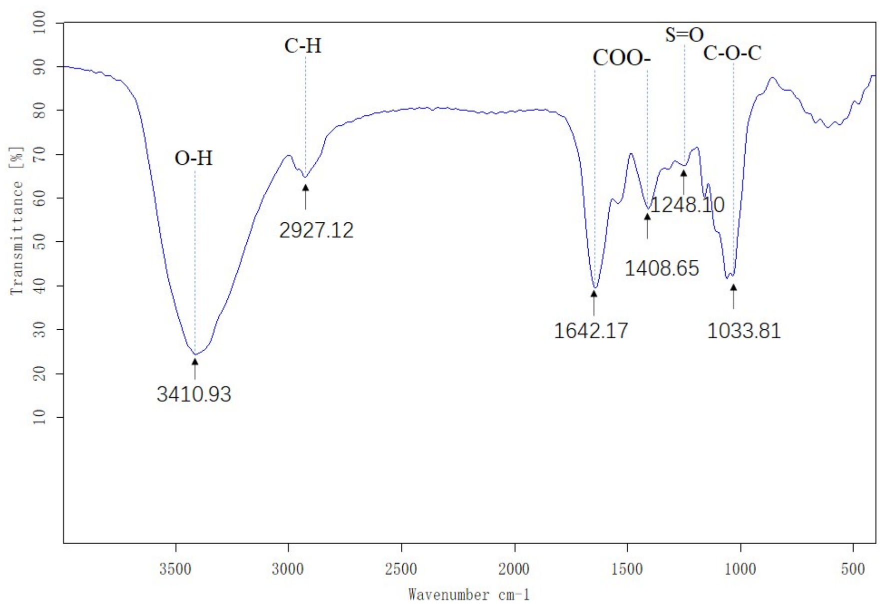

Fig. S1 FT-IR spectra of IDF.

Statement of using diethyl ether as an anesthesia

Diethyl ether was used to anaesthetize the mice by inhalation to reduce animal suffering in this report. However, diethyl ether is well recognized to be hazardous to animal workers because of the risk of explosions. Additionally, induction of anesthesia is slow and potentially unpleasant to the individual animal, causing irritation to the eyes, nasal mucosae and the upper respiratory tract. Therefore, it should have been avoided. We have updated our protocol and will use isoflurane instead in our future study.

References

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