

## Supplementary Data

**Table S1.** Composition of experimental diets

Ingredients (g/kg diet)	Diet			
	CON	HF	HF/S	HF/SI
Casein <sup>1</sup>	195	195		
Soy protein isolate <sup>2</sup>			195	195
DL-Methionine			2.11	2.11
Cystine	3	3	1.59	1.59
Sucrose	120	340	340	340
Cornstarch	429.24	56.996	56.296	54.796
Maltodextrin	100	60	60	60
Lard		210	210	210
Soybean oil	50	20	20	20
Cholesterol		12.5	12.5	12.5
Cellulose	50	37.5	37.5	37.5
Mineral Mix	35	43	43	43
Choline Bitartrate	2.75	3	3	3
Vitamin Mix	15	19	19	19
TBHQ, antioxidant	0.01	0.004	0.004	0.004
Soy isoflavone concentrate <sup>3</sup>				1.5
Total	1000	1000	1000	1000
Total isoflavone as aglycone equivalents (mg/kg diet)			35	405
Energy (kcal/g diet)	3.7	4.7	4.7	4.7

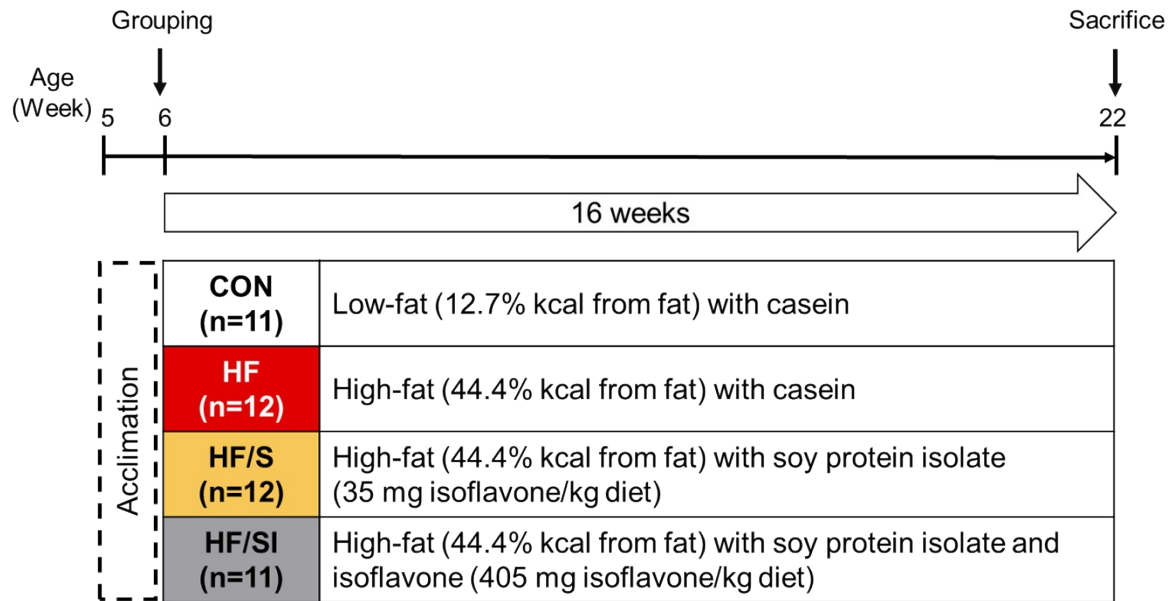
<sup>1</sup> Rennet Casein, edible grade (Dairygold, USA)

<sup>2</sup> Pro-fam 974 (0.037 mg genistein, 0.147 mg genistin, 0.014 mg daidzein, and 0.064 mg daidzin/g; a total of 0.18 mg isoflavone as aglycone equivalents/g; ADM, USA)

<sup>3</sup> Novasoy 400 (2.3 mg genistein, 219 mg genistin, 3.5 mg daidzein, and 170 mg daidzin/g; a total of 247 mg isoflavone as aglycone equivalents/g; ADM, USA)

CON, control diet; HF, high-fat diet; HF/S, high-fat/low-isoflavone soy protein isolate diet; HF/SI, high-fat/high-isoflavone soy protein isolate diet.

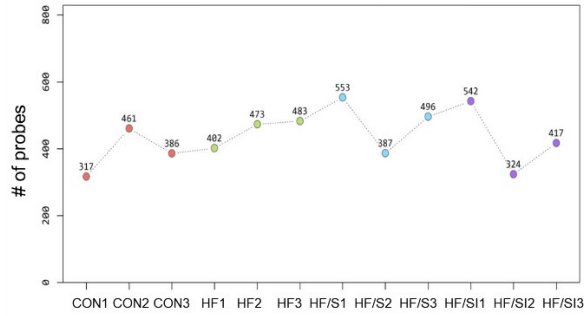
**Fig. S1**



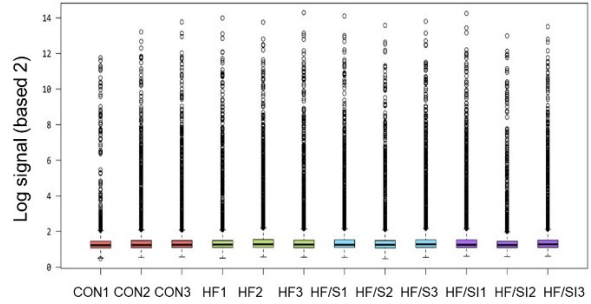
**Fig. S1.** Experimental scheme. CON, a group fed control diet; HF, a group fed high-fat diet; HF/S, a group fed high-fat/low-isoflavone soy protein diet; HF/SI, a group fed high-fat/high-isoflavone soy protein diet.

**Fig. S2**

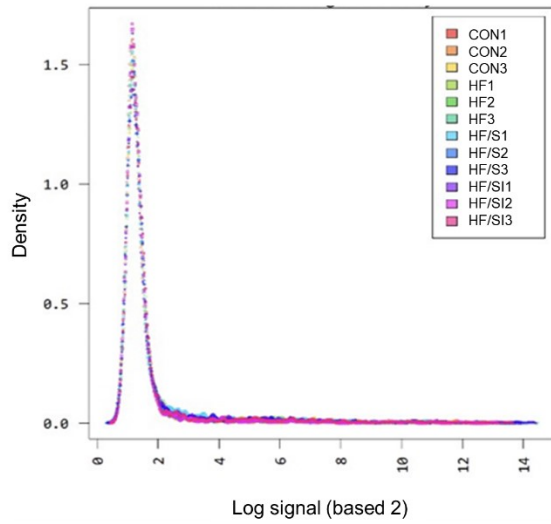
**(A)**



**(B)**



**(C)**



**Fig. S2.** Quality check of miRNA microarray expression data. (A) The number of detected miRNA probes in each sample. (B) Box plot and (C) density blot showing the normalized signal intensity distribution of each sample. CON, a group fed control diet; HF, a group fed high-fat diet; HF/S, a group fed high-fat/low-isoflavone soy protein diet; HF/SI, a group fed high-fat/high-isoflavone soy protein diet.