**Supplementary Statistic**

The outliers were calculated and excluded performing Grubbs’ test (significance level = 0.05).

**Repeated Measurement**

Body weight in experiment 5w (0-5 weeks): *F(5;215)* = 436.71, p < 0.001 for the effect of the time, *F(1;43)* = 6.14, p < 0.05 for the effect of the diet fat content, *F(1;43)* = 2.38, p > 0.05 for the effect of the protein type, *F(5;215)* = 21.43 , p < 0.001 for the effect of the time x diet fat content interaction, *F(5;215)* = 2.54, p > 0.05 for the effect of the time x diet protein type interaction, *F(5;215)* = 3.12, p < 0.05 for the effect of the time x diet fat content x diet protein type interaction.

Body weight in experiment 10w (0-10 weeks): *F(10;430)* = 339.36, p < 0.001 for the effect of the time, *F(1;43)* = 3.21, p > 0.05 for the effect of the diet fat content, *F(1;43)* = 0.15, p > 0.05 for the effect of the protein type, *F(10;430)* = 30.83 , p < 0.001 for the effect of the time x diet fat content interaction, *F(10;430)* = 0.53, p > 0.05 for the effect of the time x diet protein type interaction, *F(10;430)* = 3.11, 0.07 < p > 0.05 for the effect of the time x diet fat content x diet protein type interaction.

Cumulative Weight Gain experiment 5w (0-5 weeks): *F(**4;172)* = 340.66, p < 0.001 for the effect of the time, *F(1;43)* = 33.29, p < 0.001 for the effect of the diet fat content, *F(1;43)* = 4.13, p < 0.05 for the effect of the protein type, *F(4;172)* = 12.55 , p < 0.001 for the effect of the time x diet fat content interaction, *F(4;172)* = 1.36, p > 0.05 for the effect of the time x diet protein type interaction, *F(4;172)* = 2.55 p > 0.05 for the effect of the time x diet fat content x diet protein type interaction.

Cumulative Weight Gain experiment 10w (0-10 weeks): *F(**9;396)* = 285.36, p < 0.001 for the effect of the time, *F(1;44)* = 16.91, p < 0.001 for the effect of the diet fat content, *F(1;44)* = 0.026, p > 0.05 for the effect of the protein type, *F(9;396)* = 37.85, p < 0.001 for the effect of the time x diet fat content interaction, *F(9;396)* = 0.66, p > 0.05 for the effect of the time x diet protein type interaction, *F(9;396)* = 4.61 p < 0.05 for the effect of the time x diet fat content x diet protein type interaction.

Cumulative Energy Intake/mouse experiment 5w (0-5 weeks): *F(**9;72)* = 6615.09, p < 0.001 for the effect of the time, *F(1;8)* = 8.09, p < 0.05 for the effect of the protein type,  *F(9;72)* = 20.71, p < 0.01 for the effect of the time x diet protein type interaction.

Cumulative Energy Intake/mouse experiment 10w (0-10 weeks): *F(4;32)* = 3575.00, p < 0.001 for the effect of the time, *F(1;8)* = 11.36, p < 0.05 for the effect of the protein type, *F(4;32)* = 8.70, p < 0.05 for the effect of the time x diet protein type interaction.