**Supplementary Material**

**Supplementary Table 1.** Dietary composition of the semi-synthetic diet following the AIN-93G recommendations, consumed by all groups in both experiments.

|  |  |
| --- | --- |
| **Dietary components** | **Quantities (g/kg)** |
| Casein\* | 200 |
| Methionine\* | 3 |
| Corn starch | 432 |
| Sucrose | 200 |
| Corn oil | 70 |
| Cellulose\* | 50 |
| Mineral mix1\* | 35 |
| Vitamin mix2\* | 10 |

1 Mineral mix (AIN-93G, used at 35 g/kg of diet, obtained from Dyets inc.)

2 Vitamin mix (AIN-93VX, used at 10 g/kg of diet, obtained from Dyets inc.)

\*Obtained from Dyets Inc., Bethlehem, Pennsylvania, USA

**Supplementary Figure 1.** Mean temperatures of four water bottles measured for 6 hours.

Data is presented as mean ± SD. Beverage bottles (plain and/or sweetened water) were presented to the rats frozen and wrapped in a thermal insulator. The bottles were changed every six hours; this allowed their temperature to be maintained at a mean of 4°C throughout the experimental period.

**Supplementary Table 2.** Baseline and final body weight and composition of the rats in Experiment 1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | CW | | NW | | *P*-value |
|  | Mean | SD | Mean | SD |  |
| Baseline body weight (g) | 259.65 | 10.86 | 258.79 | 14.40 | 0.889 |
| Baseline lean body mass (g) | 181.95 | 12.83 | 179.51 | 12.50 | 0.689 |
| Baseline body fat mass (g) | 51.51 | 10.39 | 54.11 | 8.95 | 0.582 |
| Final body weight (g) | 511.60 | 34.00 | 506.80 | 39.60 | 0.784 |
| Final lean body mass (g) | 301.00 | 32.50 | 271.70 | 30.40 | 0.067 |
| Final body fat mass (g) | 155.30 | 45.00 | 182.70 | 52.30 | 0.251 |

Group CW: cold water (~4°C); Group NW: room temperature water (~22°C).

Rats were maintained for 8 weeks on cold or room temperature water.

Data are expressed as the mean ± SD of all values. An unpaired sample t-test was performed. Significance was set at a P-value<0.05.

**Supplementary Table 3.** Baseline and final body weight and composition of the rats in Experiment 2

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | CSu | | NSu | | CAk | | NAk | | *P*-value | | |
|  | Mean | SD | Mean | SD | Mean | SD | Mean | SD | cold | sweet | cold\*sweet |
| Baseline body weight (g) | 175.23 | 21.89 | 172.53 | 10.17 | 170.73 | 12.90 | 173.56 | 11.91 | 0.990 | 0.755 | 0.619 |
| Baseline lean body mass (g) | 129.01 | 15.23 | 126.54 | 6.08 | 125.53 | 7.29 | 125.10 | 9.98 | 0.708 | 0.525 | 0.793 |
| Baseline body fat mass (g) | 28.40 | 5.43 | 28.57 | 3.76 | 28.22 | 4.69 | 30.88 | 2.69 | 0.376 | 0.502 | 0.434 |
| Final body weight (g) | 461.24 | 41.86 | 449.96 | 53.30 | 471.95 | 38.34 | 465.60 | 19.61 | 0.563 | 0.389 | 0.871 |
| Final lean body mass (g) | 305.56 | 23.80 | 300.19 | 22.56 | 311.11 | 19.90 | 294.44 | 15.21 | 0.164 | 0.990 | 0.469 |
| Final body fat mass (g) | 104.52 | 21.03 | 102.00 | 33.64 | 110.20 | 17.37 | 119.86 | 12.52 | 0.681 | 0.183 | 0.485 |

Group CSu: cold water (~4°C) sweetened with 10% sucrose; Group NSu: room temperature water (~22°C) sweetened with 10% sucrose; Group CAk: cold water (~4°C) sweetened with 0.05% acesulfame-K; Group NAk: room temperature water (~22°C) sweetened with 0.05% acesulfame-K.

Data are expressed as the mean ± SD of all values. A two-way ANOVA was performed with time and temperature of the beverages as factors.

Significance was set at P-value<0.05.