**Supplementary Table 1** Physical activity and daily nutrients intake across groups at baseline and 12 wk

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Anthocyanin (n = 37) |  | Placebo (n = 37) | *P*1† | *P*2 ‡ |
|  | Baseline | 12 wk |  | Baseline | 12 wk |
| Energy (Kcal/d) | 1709 ± 429 | 1821 ± 534 |  | 1650 ± 496 | 1657 ± 491 | 0.615 | 0.214 |
| Protein (g/d) | 62.7 ± 18.7 | 64.8 ± 22.9 |  | 60.7 ± 21.7 | 60.6 ± 22.1 | 0.697 | 0.460 |
| Fat (g/d) | 56.0 ± 20.9 | 68.2 ± 22.7 |  | 61.1 ± 22.3 | 63.4 ± 17.9 | 0.355 | 0.362 |
| Carbohydrate (g/d) | 236.3 ± 66.5 | 235.6 ± 86.8 |  | 213.3 ± 77.6 | 208.8 ± 77.9 | 0.211 | 0.207 |
| Physical activity (MET) | 1498 (565, 3465) | 1890 (924, 3139) |  | 990 (453, 2542) | 1386 (946, 2492) | 0.377 | 0.654 |

MET, metabolic equivalents.

Data are expressed as means ± SD or medians with the upper and lower quartiles in parentheses.

†There were no significantly differences between 2 groups at baseline for any variable by the independent-samples t test.

‡There were no significantly differences between 2 groups after intervention for any variable by the independent-samples t test or Mann-Whitney U test.

**Supplement Table 2** Baseline characteristic of subjects had oral glucose tolerance test

|  |  |  |  |
| --- | --- | --- | --- |
|  | Anthocyanin (n = 20) | Placebo (n = 13) | *P* ‡ |
| BMI | 27.0 ± 3.2 | 27.6 ± 3.2 | 0.581 |
| Waist circumference (cm) | 88.7 ± 6.8 | 91.5 ± 7.1 | 0.255 |
| Hip circumference (cm) | 99.5 ± 4.9 | 101.9 ± 6.6 | 0.232 |
| Waist/hip ratio | 0.89 ± 0.05 | 0.90 ± 0.05 | 0.543 |
| SBP (mmHg) | 120.6 ± 9.7 | 123.1 ± 10.3 | 0.498 |
| DBP (mmHg) | 80.5 ± 7.4 | 80.7 ± 6.9 | 0.925 |
| Physical activity (MET) | 1942 (367, 2069) | 1840 (462, 2170) | 0.712 |
| Energy (kcal) | 1709.5 ± 429.8 | 1650.5 ± 496.9 | 0.615 |
| Protein (g/d) | 62.7 ± 18.7 | 60.7 ± 21.7 | 0.697 |
| Fat (g/d) | 56.0 ± 20.9 | 61.1 ± 22.3 | 0.355 |
| FBG (mmol/L) | 5.2 ± 0.6 | 5.2 ± 0.5 | 0.784 |
| Insulin (mU/L) | 4.7 ± 1.2 | 4.4 ± 0.9 | 0.419 |
| HOMA-IR | 1.08 ± 0.03 | 1.01 ± 0.02 | 0.325 |

BMI, body mass index; DBP, diastolic blood pressure; FBG, fasting blood glucose; HOMA-IR, homeostasis model assessment of insulin resistance; MET, metabolic equivalents; SBP, systolic blood pressure.

Data are expressed as means ± SD or medians with the upper and lower quartiles in parentheses.

†There were no significantly differences between 2 groups at baseline for any variable by the independent-samples *t* test or chi square test.

**Supplementary Table** 3 Anthropometric characteristics across groups at baseline, 4 wk, 8 wk and 12 wk

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Anthocyanin (n = 37) |  | Placebo (n = 37) | *P*1† | *P*2‡ |
|  | Baseline | 4 wk | 8 wk | 12 wk |  | Baseline | 4 wk | 8 wk | 12 wk |
| Weight (kg) | 71.0 ± 9.4 | 72.4 ± 10.6 | 71.1 ± 9.3 | 71.0 ± 9.5 |  | 70.5 ± 11.7 | 70.6 ± 12.0 | 71.1 ± 12.1 | 71.5 ± 12.5 | 0.839 | 0.961 |
| BMI (kg/m2) | 27.1 ± 3.2 | 27.2 ±3.1 | 27.1 ± 3.2 | 27.2 ± 3.1 |  | 27.3 ± 3.5 | 27.4 ± 3.5 | 27.6 ±3.5 | 27.7 ± 3.7 | 0.843 | 0.705 |
| Waist circumference (cm) | 89.6 ± 7.3 | 90.1 ±7.3 | 89.1 ± 7.5 | 88.0 ± 7.5 |  | 90.4 ± 8.0 | 90.5 ± 8.6 | 89.2 ± 9.2 | 87.3 ± 8.6 | 0.662 | 0.944 |
| Hip circumference (cm) | 100.1 ± 5.6 | 100.2 ± 5.0 | 99.4 ± 4.7 | 98.2 ± 5.0 |  | 99.4 ± 6.7 | 99.6 ±6.3 | 98.9 ±6.4 | 97.8 ± 6.3 | 0.704 | 0.721 |
| Waist/hip ratio | 0.90 ± 0.05 | 0.90 ± 0.05 | 0.90 ± 0.05 | 0.90 ± 0.05 |  | 0.91 ± 0.05 | 0.91 ± 0.04 | 0.90 ± 0.05 | 0.90 ± 0.05 | 0.280 | 0.651 |

BMI, body mass index;

Data are expressed as means ± SD;

†There were no significant differences between 2 groups at baseline for any variable by the independent-samples *t* test.

‡There were no significant differences between 2 groups during the intervention period for any variable by ANOVA repeated measures test.