

**Supplementary Table 1.** Information stated in the consent document.

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|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | the name of the study and the fact that it has been reviewed by the bioethics committee of Hokkaido Information University and has been approved by the president                                                                                                                                                                       |
| 2  | name, affiliation, and contact information of the investigator, consultation service for the study, and the medical institution cooperating with the study                                                                                                                                                                              |
| 3  | purpose and method of the trial                                                                                                                                                                                                                                                                                                         |
| 4  | expected effects (physician comments can be obtained through periodic blood tests, etc.) and expected disadvantages (the burden of eating the test food every day, the burden of writing in the daily diary, the time restriction of regular visits, the burden of taking blood samples and various tests, etc.) of trial participation |
| 5  | ability to withdraw from the trial at any time                                                                                                                                                                                                                                                                                          |
| 6  | no consequences for failing to participate or withdrawing from the trial                                                                                                                                                                                                                                                                |
| 7  | methods of confidentiality of subjects and anonymizing, storing, and disposing of samples and information                                                                                                                                                                                                                               |
| 8  | matters concerning compensation in the event of adverse health effects requiring treatment                                                                                                                                                                                                                                              |
| 9  | matters concerning the bearing of expenses pertaining to the examination                                                                                                                                                                                                                                                                |
| 10 | research funding sources and conflicts of interest                                                                                                                                                                                                                                                                                      |
| 11 | method for disclosing information on tests                                                                                                                                                                                                                                                                                              |

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**Supplementary Table 2.** The secondary endpoints assessed in the SM DNA and placebo groups.

|                               |       |                     |               |                 |         |         |       | <i>p</i> value* |  |                  |  |             |  |
|-------------------------------|-------|---------------------|---------------|-----------------|---------|---------|-------|-----------------|--|------------------|--|-------------|--|
|                               |       | Placebo (n = 22-23) |               | SM DNA (n = 26) |         | Group   |       | Two-way ANOVA   |  |                  |  |             |  |
|                               |       |                     |               |                 |         |         |       | Period effect   |  | Treatment effect |  | Interaction |  |
| FIB-4 index                   |       | Basal               | 0.96 ± 0.41   | 1.15 ± 0.32     | 0.069 † | 0.004 # | 0.900 |                 |  | 0.843            |  |             |  |
|                               | Δ4wk  | -0.04 ± 0.18        | -0.07 ± 0.22  | 0.681           |         |         |       |                 |  |                  |  |             |  |
|                               | Δ8wk  | 0.05 ± 0.15         | 0.05 ± 0.33   | 0.934           |         |         |       |                 |  |                  |  |             |  |
|                               | Δ12wk | 0.03 ± 0.18         | 0.04 ± 0.22   | 0.881           |         |         |       |                 |  |                  |  |             |  |
| NAFLD fibrosis score          |       | Basal               | -3.02 ± 1.04  | -2.47 ± 0.70    | 0.035 # | 0.010 # | 0.385 |                 |  | 0.586            |  |             |  |
|                               | Δ4wk  | -0.04 ± 0.53        | -0.17 ± 0.29  | 0.264           |         |         |       |                 |  |                  |  |             |  |
|                               | Δ8wk  | 0.17 ± 0.52         | 0.03 ± 0.53   | 0.372           |         |         |       |                 |  |                  |  |             |  |
|                               | Δ12wk | 0.09 ± 0.59         | 0.07 ± 0.35   | 0.894           |         |         |       |                 |  |                  |  |             |  |
| TP (g/dL)                     |       | Basal               | 7.55 ± 0.30   | 7.46 ± 0.36     | 0.347   | 0.058 † | 0.429 |                 |  | 0.604            |  |             |  |
|                               | Δ4wk  | -0.08 ± 0.24        | -0.06 ± 0.22  | 0.707           |         |         |       |                 |  |                  |  |             |  |
|                               | Δ8wk  | -0.05 ± 0.31        | 0.00 ± 0.28   | 0.557           |         |         |       |                 |  |                  |  |             |  |
|                               | Δ12wk | -0.17 ± 0.37        | -0.07 ± 0.26  | 0.275           |         |         |       |                 |  |                  |  |             |  |
| Alb (g/dL)                    |       | Basal               | 4.58 ± 0.23   | 4.62 ± 0.19     | 0.545   | 0.464   | 0.560 |                 |  | 0.865            |  |             |  |
|                               | Δ4wk  | 0.00 ± 0.17         | 0.02 ± 0.13   | 0.655           |         |         |       |                 |  |                  |  |             |  |
|                               | Δ8wk  | 0.00 ± 0.15         | 0.03 ± 0.15   | 0.435           |         |         |       |                 |  |                  |  |             |  |
|                               | Δ12wk | -0.02 ± 0.20        | -0.01 ± 0.15  | 0.782           |         |         |       |                 |  |                  |  |             |  |
| A/G ratio                     |       | Basal               | 1.56 ± 0.21   | 1.65 ± 0.20     | 0.162   | 0.254   | 0.630 |                 |  | 0.095 †          |  |             |  |
|                               | Δ4wk  | 0.04 ± 0.11         | 0.05 ± 0.09   | 0.874           |         |         |       |                 |  |                  |  |             |  |
|                               | Δ8wk  | 0.03 ± 0.11         | 0.03 ± 0.09   | 0.769           |         |         |       |                 |  |                  |  |             |  |
|                               | Δ12wk | 0.08 ± 0.10         | 0.03 ± 0.09   | 0.082 †         |         |         |       |                 |  |                  |  |             |  |
| Fasting blood glucose (mg/dL) |       | Basal               | 94.09 ± 11.33 | 95.31 ± 11.62   | 0.712   | 0.061 † | 0.656 |                 |  | 0.468            |  |             |  |
|                               | Δ4wk  | -1.35 ± 7.27        | 0.15 ± 5.65   | 0.421           |         |         |       |                 |  |                  |  |             |  |
|                               | Δ8wk  | 0.86 ± 6.40         | 0.65 ± 6.57   | 0.912           |         |         |       |                 |  |                  |  |             |  |
|                               | Δ12wk | -1.61 ± 6.84        | -0.19 ± 6.81  | 0.472           |         |         |       |                 |  |                  |  |             |  |
| HbA1c (%)                     |       | Basal               | 5.37 ± 0.37   | 5.47 ± 0.35     | 0.338   | 0.003 # | 0.880 |                 |  | 0.027 #          |  |             |  |

|                  |       |                |                |         |         |         |       |
|------------------|-------|----------------|----------------|---------|---------|---------|-------|
|                  | Δ4wk  | 0.08 ± 0.12    | 0.12 ± 0.14    | 0.278   |         |         |       |
|                  | Δ8wk  | 0.17 ± 0.22    | 0.21 ± 0.15    | 0.513   |         |         |       |
|                  | Δ12wk | 0.16 ± 0.25    | 0.05 ± 0.18    | 0.071 † |         |         |       |
| Insulin (μU/mL)  | Basal | 7.04 ± 4.29    | 6.32 ± 3.79    | 0.533   | 0.154   | 0.080 † | 0.347 |
|                  | Δ4wk  | -1.10 ± 3.29   | 0.12 ± 2.53    | 0.151   |         |         |       |
|                  | Δ8wk  | -0.60 ± 2.84   | 0.14 ± 1.49    | 0.276   |         |         |       |
|                  | Δ12wk | -1.93 ± 3.85   | -0.05 ± 3.61   | 0.084 † |         |         |       |
| HOMA-IR          | Basal | 1.68 ± 1.21    | 1.50 ± 0.92    | 0.553   | 0.097 † | 0.073 † | 0.279 |
|                  | Δ4wk  | -0.29 ± 0.76   | 0.03 ± 0.59    | 0.106   |         |         |       |
|                  | Δ8wk  | -0.13 ± 0.67   | 0.05 ± 0.41    | 0.287   |         |         |       |
|                  | Δ12wk | -0.50 ± 1.04   | -0.01 ± 0.89   | 0.083 † |         |         |       |
| T-Chol (mg/dL)   | Basal | 229.91 ± 32.98 | 238.96 ± 29.38 | 0.315   | 0.534   | 0.814   | 0.642 |
|                  | Δ4wk  | 6.35 ± 23.61   | 4.73 ± 21.05   | 0.801   |         |         |       |
|                  | Δ8wk  | 7.36 ± 15.00   | 3.77 ± 17.67   | 0.456   |         |         |       |
|                  | Δ12wk | 1.13 ± 20.53   | 3.62 ± 16.50   | 0.641   |         |         |       |
| HDL-Chol (mg/dL) | Basal | 65.00 ± 13.68  | 69.19 ± 20.07  | 0.404   | 0.825   | 0.117   | 0.307 |
|                  | Δ4wk  | -0.30 ± 6.18   | -0.38 ± 6.13   | 0.964   |         |         |       |
|                  | Δ8wk  | 1.50 ± 6.09    | -1.62 ± 5.95   | 0.080 † |         |         |       |
|                  | Δ12wk | 1.35 ± 7.58    | -1.23 ± 6.83   | 0.216   |         |         |       |
| LDL-Chol (mg/dL) | Basal | 141.61 ± 28.99 | 146.50 ± 31.19 | 0.574   | 0.178   | 0.960   | 0.469 |
|                  | Δ4wk  | 8.74 ± 19.41   | 7.46 ± 17.38   | 0.809   |         |         |       |
|                  | Δ8wk  | 6.73 ± 14.71   | 3.88 ± 16.39   | 0.534   |         |         |       |
|                  | Δ12wk | 1.39 ± 17.91   | 4.85 ± 14.45   | 0.459   |         |         |       |
| TG (mg/dL)       | Basal | 107.09 ± 45.68 | 118.35 ± 56.44 | 0.450   | 0.190   | 0.871   | 0.484 |
|                  | Δ4wk  | 4.09 ± 30.24   | 1.88 ± 41.94   | 0.836   |         |         |       |
|                  | Δ8wk  | 11.27 ± 40.64  | 7.92 ± 41.19   | 0.779   |         |         |       |
|                  | Δ12wk | -3.65 ± 26.17  | 4.31 ± 40.33   | 0.423   |         |         |       |
| Hs-CRP (mg/dL)   | n=17  |                | n=21           |         |         |         |       |
|                  | Basal | 0.06 ± 0.05    | 0.06 ± 0.06    | 0.845   | 0.884   | 0.888   | 0.212 |
|                  | Δ4wk  | 0.01 ± 0.05    | 0.01 ± 0.05    | 0.955   |         |         |       |
|                  | Δ8wk  | -0.01 ± 0.03   | 0.01 ± 0.05    | 0.082 † |         |         |       |
|                  | Δ12wk | 0.00 ± 0.06    | -0.01 ± 0.05   | 0.449   |         |         |       |

|                           |               |                   |                   |         |          |         |       |
|---------------------------|---------------|-------------------|-------------------|---------|----------|---------|-------|
| TNF- $\alpha$ (pg/mL)     | Basal         | 3.03 $\pm$ 1.28   | 2.73 $\pm$ 0.64   | 0.300   | <0.001 # | 0.537   | 0.769 |
|                           | $\Delta$ 8wk  | 0.15 $\pm$ 1.80   | -0.07 $\pm$ 0.64  | 0.555   |          |         |       |
|                           | $\Delta$ 12wk | 1.02 $\pm$ 2.35   | 0.76 $\pm$ 0.51   | 0.573   |          |         |       |
|                           |               |                   |                   |         |          |         |       |
| IL1- $\beta$ (pg/mL)      | Basal         | 1.43 $\pm$ 0.95   | 1.18 $\pm$ 0.29   | 0.207   | 0.005 #  | 0.291   | 0.325 |
|                           | $\Delta$ 8wk  | 0.13 $\pm$ 1.84   | -0.25 $\pm$ 0.20  | 0.303   |          |         |       |
|                           | $\Delta$ 12wk | 0.30 $\pm$ 2.12   | -0.16 $\pm$ 0.14  | 0.270   |          |         |       |
|                           |               |                   |                   |         |          |         |       |
| IL-6 (pg/mL)              | Basal         | 1.94 $\pm$ 2.77   | 5.56 $\pm$ 22.06  | 0.439   | 0.466    | 0.356   | 0.221 |
|                           | $\Delta$ 8wk  | 0.29 $\pm$ 0.84   | -3.09 $\pm$ 16.61 | 0.345   |          |         |       |
|                           | $\Delta$ 12wk | 0.20 $\pm$ 0.50   | -2.71 $\pm$ 14.89 | 0.355   |          |         |       |
|                           |               |                   |                   |         |          |         |       |
| Adiponectin ( $\mu$ g/mL) | Basal         | 8.70 $\pm$ 2.90   | 9.15 $\pm$ 3.61   | 0.633   | 0.203    | 0.920   | 0.896 |
|                           | $\Delta$ 4wk  | -0.04 $\pm$ 0.68  | -0.06 $\pm$ 0.74  | 0.913   |          |         |       |
|                           | $\Delta$ 8wk  | 0.19 $\pm$ 0.91   | 0.18 $\pm$ 1.07   | 0.985   |          |         |       |
|                           | $\Delta$ 12wk | 0.05 $\pm$ 0.85   | 0.17 $\pm$ 0.92   | 0.635   |          |         |       |
|                           |               |                   |                   |         |          |         |       |
| Leptin (ng/mL)            | Basal         | 19.59 $\pm$ 11.38 | 18.38 $\pm$ 8.39  | 0.672   | 0.520    | 0.181   | 0.630 |
|                           | $\Delta$ 4wk  | 1.31 $\pm$ 4.69   | 2.01 $\pm$ 4.02   | 0.580   |          |         |       |
|                           | $\Delta$ 8wk  | 0.76 $\pm$ 4.82   | 3.09 $\pm$ 4.88   | 0.104   |          |         |       |
|                           | $\Delta$ 12wk | 0.10 $\pm$ 6.92   | 1.93 $\pm$ 5.51   | 0.309   |          |         |       |
|                           |               |                   |                   |         |          |         |       |
| Weight (kg)               | Basal         | 66.37 $\pm$ 7.48  | 65.55 $\pm$ 11.91 | 0.777   | 0.850    | 0.043 # | 0.266 |
|                           | $\Delta$ 4wk  | 0.11 $\pm$ 0.86   | -0.12 $\pm$ 0.66  | 0.282   |          |         |       |
|                           | $\Delta$ 8wk  | 0.26 $\pm$ 1.24   | -0.35 $\pm$ 0.61  | 0.044 # |          |         |       |
|                           | $\Delta$ 12wk | 0.33 $\pm$ 1.21   | -0.27 $\pm$ 0.97  | 0.058 † |          |         |       |
|                           |               |                   |                   |         |          |         |       |
| Body fat percentage (%)   | Basal         | 34.29 $\pm$ 6.79  | 34.37 $\pm$ 5.40  | 0.961   | 0.036 #  | 0.726   | 0.515 |
|                           | $\Delta$ 4wk  | -0.02 $\pm$ 0.96  | -0.27 $\pm$ 0.90  | 0.350   |          |         |       |
|                           | $\Delta$ 8wk  | -0.04 $\pm$ 1.00  | -0.11 $\pm$ 0.67  | 0.773   |          |         |       |
|                           | $\Delta$ 12wk | -0.36 $\pm$ 1.25  | -0.35 $\pm$ 0.97  | 0.984   |          |         |       |
|                           |               |                   |                   |         |          |         |       |
| BMI (kg/m <sup>2</sup> )  | Basal         | 25.60 $\pm$ 2.02  | 25.47 $\pm$ 2.03  | 0.817   | 0.771    | 0.058 † | 0.292 |
|                           | $\Delta$ 4wk  | 0.03 $\pm$ 0.35   | -0.06 $\pm$ 0.26  | 0.296   |          |         |       |
|                           | $\Delta$ 8wk  | 0.09 $\pm$ 0.48   | -0.14 $\pm$ 0.25  | 0.053 † |          |         |       |
|                           | $\Delta$ 12wk | 0.13 $\pm$ 0.47   | -0.10 $\pm$ 0.39  | 0.071 † |          |         |       |
|                           |               |                   |                   |         |          |         |       |

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Values are presented as the mean  $\pm$  standard deviation.

\**P* values were determined by independent sample *t*-tests; †, *P*<0.1 #, *P*<0.05.

**Supplementary Table 3.** Effects of the SM DNA on the parameters assessed through the VAS questionnaire.

|                           |       |                     |         |                 |         | <i>p</i> value* |               |                  |             |
|---------------------------|-------|---------------------|---------|-----------------|---------|-----------------|---------------|------------------|-------------|
|                           |       | Placebo (n = 22-23) |         | SM DNA (n = 26) |         | Group           | Two-way ANOVA |                  |             |
|                           |       |                     |         |                 |         |                 | Period effect | Treatment effect | Interaction |
| Lassitude (mm)            | Basal | 51.87               | ± 26.05 | 61.23           | ± 20.87 | 0.169           | 0.992         | 0.081 †          | 0.544       |
|                           | 4wk   | 61.70               | ± 23.68 | 58.54           | ± 21.72 | 0.629           |               |                  |             |
|                           | 8wk   | 58.14               | ± 28.01 | 61.96           | ± 22.26 | 0.601           |               |                  |             |
|                           | 12wk  | 61.57               | ± 26.62 | 60.88           | ± 23.48 | 0.925           |               |                  |             |
| Mental stress (mm)        | Basal | 56.65               | ± 24.48 | 58.58           | ± 22.27 | 0.774           | 0.740         | 0.719            | 0.795       |
|                           | 4wk   | 63.39               | ± 27.07 | 62.88           | ± 22.76 | 0.944           |               |                  |             |
|                           | 8wk   | 60.55               | ± 26.78 | 60.50           | ± 23.12 | 0.995           |               |                  |             |
|                           | 12wk  | 61.91               | ± 23.95 | 63.69           | ± 24.88 | 0.800           |               |                  |             |
| Skin stains (mm)          | Basal | 39.35               | ± 22.50 | 50.62           | ± 26.27 | 0.116           | 0.025 #       | 0.717            | 0.201       |
|                           | 4wk   | 43.30               | ± 21.90 | 54.15           | ± 24.72 | 0.113           |               |                  |             |
|                           | 8wk   | 43.09               | ± 23.40 | 55.23           | ± 25.37 | 0.094 †         |               |                  |             |
|                           | 12wk  | 52.04               | ± 25.69 | 56.19           | ± 26.56 | 0.582           |               |                  |             |
| Wrinkles of the skin (mm) | Basal | 45.61               | ± 22.89 | 51.77           | ± 25.90 | 0.385           | 0.979         | 0.492            | 0.483       |
|                           | 4wk   | 51.30               | ± 22.54 | 58.65           | ± 24.19 | 0.279           |               |                  |             |
|                           | 8wk   | 49.00               | ± 21.84 | 61.54           | ± 22.42 | 0.057 †         |               |                  |             |
|                           | 12wk  | 52.57               | ± 23.68 | 59.92           | ± 21.18 | 0.257           |               |                  |             |
| Dull skin (mm)            | Basal | 43.57               | ± 19.99 | 56.00           | ± 21.63 | 0.043 #         | 0.616         | 0.589            | 0.918       |
|                           | 4wk   | 48.65               | ± 19.23 | 57.54           | ± 22.14 | 0.143           |               |                  |             |
|                           | 8wk   | 47.77               | ± 21.79 | 58.50           | ± 22.43 | 0.101           |               |                  |             |
|                           | 12wk  | 51.78               | ± 23.01 | 59.85           | ± 22.19 | 0.218           |               |                  |             |
| Sticky skin (mm)          | Basal | 59.48               | ± 26.70 | 69.81           | ± 20.28 | 0.131           | 0.486         | 0.285            | 0.140       |
|                           | 4wk   | 68.61               | ± 22.13 | 70.54           | ± 17.80 | 0.737           |               |                  |             |
|                           | 8wk   | 60.36               | ± 20.58 | 72.00           | ± 16.07 | 0.033 #         |               |                  |             |
|                           | 12wk  | 66.43               | ± 23.87 | 69.69           | ± 18.93 | 0.597           |               |                  |             |
| Dry skin (mm)             |       |                     |         |                 |         |                 |               |                  |             |

|                       |       |               |               |         |         |         |       |
|-----------------------|-------|---------------|---------------|---------|---------|---------|-------|
|                       | Basal | 42.13 ± 25.46 | 56.65 ± 20.59 | 0.032 # | 0.929   | 0.554   | 0.333 |
|                       | 4wk   | 47.22 ± 24.07 | 55.73 ± 23.33 | 0.215   |         |         |       |
|                       | 8wk   | 48.18 ± 26.22 | 56.19 ± 23.77 | 0.273   |         |         |       |
|                       | 12wk  | 45.43 ± 22.08 | 59.77 ± 21.76 | 0.027 # |         |         |       |
| <hr/>                 |       |               |               |         |         |         |       |
| Breakouts · Acne (mm) | Basal | 61.83 ± 33.51 | 71.69 ± 26.25 | 0.262   | 0.057 † | 0.906   | 0.939 |
|                       | 4wk   | 72.35 ± 25.37 | 80.65 ± 17.53 | 0.196   |         |         |       |
|                       | 8wk   | 64.14 ± 26.14 | 75.38 ± 22.76 | 0.118   |         |         |       |
|                       | 12wk  | 66.17 ± 27.10 | 78.35 ± 19.08 | 0.080 † |         |         |       |
| <hr/>                 |       |               |               |         |         |         |       |
| Skin condition (mm)   | Basal | 43.35 ± 23.97 | 61.31 ± 19.53 | 0.006 # | 0.674   | 0.004 # | 0.384 |
|                       | 4wk   | 53.22 ± 20.33 | 60.27 ± 17.32 | 0.196   |         |         |       |
|                       | 8wk   | 54.09 ± 25.79 | 62.27 ± 18.69 | 0.224   |         |         |       |
|                       | 12wk  | 51.52 ± 19.64 | 65.00 ± 17.24 | 0.014 # |         |         |       |

Values are presented as the mean ± standard deviation.

\**P* values were determined by independent sample *t*-tests; †, *P*<0.1 #, *P*<0.05.

**Supplementary Table 4.** Effect of SM DNA on secondary endpoints in males and females obtained after subgroup analysis based on the gender of the participants.

|                           |  | male            |         |                |         |                 |   | female               |         |                 |         |                 |   |
|---------------------------|--|-----------------|---------|----------------|---------|-----------------|---|----------------------|---------|-----------------|---------|-----------------|---|
|                           |  | Placebo (n = 7) |         | SM DNA (n = 7) |         | <i>p</i> value* |   | Placebo (n = 15- 16) |         | SM DNA (n = 19) |         | <i>p</i> value* |   |
| Lassitude (mm)            |  |                 |         |                |         |                 |   |                      |         |                 |         |                 |   |
| Basal                     |  | 48.00           | ± 21.48 | 61.57          | ± 25.35 | 0.301           |   | 53.56                | ± 28.29 | 61.11           | ± 19.76 | 0.377           |   |
| 4wk                       |  | 64.57           | ± 26.20 | 59.57          | ± 20.39 | 0.697           |   | 60.44                | ± 23.28 | 58.16           | ± 22.72 | 0.772           |   |
| 8wk                       |  | 63.43           | ± 29.27 | 60.14          | ± 25.56 | 0.827           |   | 55.67                | ± 28.09 | 62.63           | ± 21.65 | 0.420           |   |
| 12wk                      |  | 57.71           | ± 26.47 | 64.43          | ± 31.43 | 0.673           |   | 63.25                | ± 27.38 | 59.58           | ± 20.72 | 0.655           |   |
| Mental stress (mm)        |  |                 |         |                |         |                 |   |                      |         |                 |         |                 |   |
| Basal                     |  | 70.57           | ± 21.09 | 61.57          | ± 25.05 | 0.481           |   | 50.56                | ± 23.90 | 57.47           | ± 21.80 | 0.378           |   |
| 4wk                       |  | 70.86           | ± 21.51 | 69.57          | ± 23.56 | 0.917           |   | 60.13                | ± 29.20 | 60.42           | ± 22.60 | 0.973           |   |
| 8wk                       |  | 66.43           | ± 25.24 | 61.43          | ± 26.69 | 0.725           |   | 57.80                | ± 27.88 | 60.16           | ± 22.47 | 0.786           |   |
| 12wk                      |  | 62.14           | ± 24.28 | 65.71          | ± 28.26 | 0.804           |   | 61.81                | ± 24.61 | 62.95           | ± 24.31 | 0.892           |   |
| Skin stains (mm)          |  |                 |         |                |         |                 |   |                      |         |                 |         |                 |   |
| Basal                     |  | 44.14           | ± 25.18 | 66.43          | ± 23.04 | 0.110           |   | 37.25                | ± 21.76 | 44.79           | ± 25.47 | 0.358           |   |
| 4wk                       |  | 44.14           | ± 25.76 | 69.43          | ± 22.82 | 0.076           | † | 42.94                | ± 20.91 | 48.53           | ± 23.47 | 0.466           |   |
| 8wk                       |  | 40.00           | ± 26.96 | 70.43          | ± 15.69 | 0.024           | # | 44.53                | ± 22.43 | 49.63           | ± 26.25 | 0.553           |   |
| 12wk                      |  | 49.43           | ± 25.04 | 74.29          | ± 21.30 | 0.069           | † | 53.19                | ± 26.70 | 49.53           | ± 25.58 | 0.682           |   |
| Wrinkles of the skin (mm) |  |                 |         |                |         |                 |   |                      |         |                 |         |                 |   |
| Basal                     |  | 57.57           | ± 23.46 | 68.14          | ± 22.97 | 0.411           |   | 40.38                | ± 21.27 | 45.74           | ± 24.77 | 0.501           |   |
| 4wk                       |  | 57.14           | ± 16.03 | 69.43          | ± 22.49 | 0.264           |   | 48.75                | ± 24.89 | 54.68           | ± 24.14 | 0.480           |   |
| 8wk                       |  | 50.14           | ± 24.26 | 71.14          | ± 15.39 | 0.077           | † | 48.47                | ± 21.51 | 58.00           | ± 23.87 | 0.236           |   |
| 12wk                      |  | 57.00           | ± 19.25 | 74.43          | ± 21.56 | 0.137           |   | 50.63                | ± 25.71 | 54.58           | ± 18.86 | 0.604           |   |
| Dull skin (mm)            |  |                 |         |                |         |                 |   |                      |         |                 |         |                 |   |
| Basal                     |  | 53.00           | ± 20.68 | 67.71          | ± 23.49 | 0.237           |   | 39.44                | ± 18.84 | 51.68           | ± 19.82 | 0.072           | † |
| 4wk                       |  | 57.29           | ± 16.29 | 69.71          | ± 22.54 | 0.260           |   | 44.88                | ± 19.66 | 53.05           | ± 20.79 | 0.243           |   |
| 8wk                       |  | 42.29           | ± 25.28 | 70.00          | ± 14.41 | 0.027           | # | 50.33                | ± 20.41 | 54.26           | ± 23.65 | 0.613           |   |
| 12wk                      |  | 49.14           | ± 22.77 | 74.86          | ± 21.36 | 0.050           | † | 52.94                | ± 23.76 | 54.32           | ± 20.29 | 0.854           |   |
| Sticky skin (mm)          |  |                 |         |                |         |                 |   |                      |         |                 |         |                 |   |
| Basal                     |  | 43.86           | ± 22.15 | 72.71          | ± 20.60 | 0.027           | # | 66.31                | ± 26.19 | 68.74           | ± 20.63 | 0.761           |   |
| 4wk                       |  | 52.43           | ± 22.96 | 72.57          | ± 21.02 | 0.113           |   | 75.69                | ± 18.22 | 69.79           | ± 17.04 | 0.330           |   |
| 8wk                       |  | 51.57           | ± 18.29 | 71.71          | ± 13.71 | 0.038           | # | 64.47                | ± 20.86 | 72.11           | ± 17.21 | 0.250           |   |
| 12wk                      |  | 49.86           | ± 27.45 | 64.14          | ± 23.84 | 0.319           |   | 73.69                | ± 18.70 | 71.74           | ± 17.08 | 0.749           |   |
| Dry skin (mm)             |  |                 |         |                |         |                 |   |                      |         |                 |         |                 |   |
| Basal                     |  | 42.00           | ± 25.41 | 48.29          | ± 24.96 | 0.649           |   | 42.19                | ± 26.32 | 59.74           | ± 18.54 | 0.027           | # |
| 4wk                       |  | 47.71           | ± 27.66 | 69.14          | ± 18.57 | 0.115           |   | 47.00                | ± 23.32 | 50.79           | ± 23.35 | 0.635           |   |
| 8wk                       |  | 42.43           | ± 25.93 | 60.43          | ± 27.37 | 0.231           |   | 50.87                | ± 26.81 | 54.63           | ± 22.92 | 0.662           |   |

|                     |       |   |       |       |   |       |       |   |       |   |       |       |   |       |         |
|---------------------|-------|---|-------|-------|---|-------|-------|---|-------|---|-------|-------|---|-------|---------|
| 12wk                | 42.29 | ± | 24.98 | 66.71 | ± | 24.86 | 0.092 | † | 46.81 | ± | 21.42 | 57.21 | ± | 20.64 | 0.154   |
| Breakouts·Acne (mm) |       |   |       |       |   |       |       |   |       |   |       |       |   |       |         |
| Basal               | 52.14 | ± | 28.01 | 53.57 | ± | 27.49 | 0.925 |   | 66.06 | ± | 35.64 | 78.37 | ± | 23.02 | 0.246   |
| 4wk                 | 57.14 | ± | 24.50 | 70.29 | ± | 21.81 | 0.310 |   | 79.00 | ± | 23.42 | 84.47 | ± | 14.52 | 0.424   |
| 8wk                 | 50.14 | ± | 26.58 | 65.57 | ± | 24.92 | 0.284 |   | 70.67 | ± | 24.05 | 79.00 | ± | 21.48 | 0.295   |
| 12wk                | 54.86 | ± | 27.81 | 70.57 | ± | 23.34 | 0.275 |   | 71.13 | ± | 26.11 | 81.21 | ± | 17.08 | 0.197   |
| Skin condition (mm) |       |   |       |       |   |       |       |   |       |   |       |       |   |       |         |
| Basal               | 44.14 | ± | 28.23 | 62.86 | ± | 20.76 | 0.183 |   | 43.00 | ± | 22.87 | 60.74 | ± | 19.62 | 0.019 # |
| 4wk                 | 47.29 | ± | 23.19 | 61.86 | ± | 16.54 | 0.201 |   | 55.81 | ± | 19.17 | 59.68 | ± | 18.01 | 0.543   |
| 8wk                 | 46.86 | ± | 28.50 | 66.71 | ± | 18.70 | 0.149 |   | 57.47 | ± | 24.72 | 60.63 | ± | 18.92 | 0.675   |
| 12wk                | 54.43 | ± | 24.60 | 70.71 | ± | 20.45 | 0.203 |   | 50.25 | ± | 17.84 | 62.89 | ± | 16.00 | 0.034 # |

Values are presented as the mean ± standard deviation.

\**P* values were determined by independent sample *t*-tests; †, *P*<0.1 #, *P*<0.05.