Supplementary 1. Description of the placebo and treatment products

|  |  | Placebo product | Treatment product |
|---|---|---|---|
| | Tannase-treated green tea extract | - | 83.30 |
| Ingredients and content (%) | Cyclodextrin | 16.60 | 16.65 |
| | Magnesium stearate | 0.05 | 0.05 |
| | Microcrystalline cellulose | 83.30 | - |
| | Caramel color | 0.05 | - |
| Features | | Brown capsule | |
| Packing | | One capsule (360 mg) individually packed | |

Supplementary 2. Effects of tannase-treated green tea extract on biochemical variables

| | Control group (n=34) | | | Treatment group (n=33) | | | $p$-value |
|---|---|---|---|---|---|---|---|
| | Baseline | 12 weeks | $p$-value | Baseline | 12 weeks | $p$-value | |
| hs-CRP (mg/L) | 1.32 ± 4.64 | 0.78 ± 1.64 | 0.486 | 0.94 ± 1.71 | 1.63 ± 4.84 | 0.384 | 0.266 |
| IL-6 (pg/mL) | 2.23 ± 2.19 | 2.07 ± 1.88 | 0.378 | 1.88 ± 1.80 | 1.48 ± 0.69 | 0.200 | 0.490 |
| IL-8 (pg/mL) | 18.75 ±10.51 | 19.44 ± 12.40 | 0.529 | 14.88 ± 3.66 | 15.65 ± 4.99 | 0.273 | 0.951 |
| IGF-1 (ng/mL) | 148.30 ± 42.12 | 150.73 ± 45.62 | 0.715 | 157.34 ± 41.30 | 156.94 ± 38.41 | 0.935 | 0.728 |
| Cortisol (µg/dL) | 0.13 ± 0.06 | 0.15 ± 0.06 | 0.152 | 0.16 ± 0.07 | 0.17 ± 0.11 | 0.566 | 0.823 |

Values are presented as mean ± standard deviation. $p$-values were measured by an independent t-test

Supplementary 3. Effects of tannase-treated green tea extract on safety parameters

| | Control group (n=40) | | | Treatment group (n=40) | | | $p$-value[2] |
|---|---|---|---|---|---|---|---|
| | Baseline | 12 weeks | $p$-value[1] | Baseline | 12 weeks | $p$-value[1] | |
| WBC ($\times 10^3$/μL) | 5.67 ± 1.22 | 5.35 ± 0.9 | 0.018 | 5.89 ± 1.25 | 5.41 ± 1.15 | 0.001 | 0.396 |
| RBC ($\times 100^3$/μL) | 4.38 ± 0.38 | 4.39 ± 0.35 | 0.819 | 4.58 ± 0.37 | 4.67 ± 0.36 | 0.328 | 0.706 |
| Hemoglobin (g/dL) | 13.47 ± 1.01 | 13.57 ± 1.04 | 0.372 | 13.81 ± 1.06 | 13.90 ± 1.10 | 0.284 | 0.943 |
| Hematocrit (%) | 39.98 ± 3.07 | 40.28 ± 2.91 | 0.407 | 40.85 ± 2.96 | 41.28 ± 2.98 | 0.095 | 0.752 |
| Platelet ($\times 10^3$/μL) | 238.25 ± 52.12 | 245.38 ± 51.14 | 0.094 | 243.10 ± 45.71 | 248.18 ± 46.25 | 0.208 | 0.722 |
| ALP (IU/L) | 64.73 ± 18.43 | 66.30 ± 19.70 | 0.287 | 75.83 ± 15.67 | 76.48 ± 18.80 | 0.643 | 0.648 |
| Gamma-GT (IU/L) | 18.98 ± 16.35 | 20.40 ± 17.07 | 0.404 | 21.33 ± 13.06 | 21.43 ± 12.52 | 0.926 | 0.510 |
| AST (IU/L) | 26.53 ± 6.30 | 27.15 ± 7.66 | 0.540 | 26.20 ± 8.02 | 25.70 ± 8.63 | 0.763 | 0.562 |
| ALT (IU/L) | 26.58 ± 10.37 | 26.48 ± 10.32 | 0.939 | 26.30 ± 14.40 | 23.90 ± 8.94 | 0.322 | 0.401 |
| Total bilirubin (mg/dL) | 0.85 ± 0.29 | 0.80 ± 0.23 | 0.187 | 0.89 ± 0.36 | 0.87 ± 0.44 | 0.490 | 0.694 |
| Total protein (g/dL) | 7.29 ± 0.33 | 7.22 ± 0.30 | 0.140 | 7.27 ± 0.38 | 7.32 ± 0.36 | 0.348 | 0.085 |
| Albumin (g/dL) | 4.43 ± 0.22 | 4.41 ± 0.22 | 0.402 | 4.45 ± 0.20 | 4.48 ± 0.18 | 0.242 | 0.161 |
| BUN (mg/dL) | 14.48 ± 3.43 | 15.10 ± 3.79 | 0.298 | 15.95 ± 4.80 | 15.65 ± 4.23 | 0.580 | 0.246 |
| Creatinine (mg/dL) | 0.69 ± 0.12 | 0.69 ± 0.14 | 0.536 | 0.66 ± 0.17 | 0.69 ± 0.15 | 0.262 | 0.201 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Glucose (mg/dL) | 90.93 ± 8.48 | 88.85 ± 8.84 | 0.082 | 92.73 ± 7.45 | 90.25 ± 8.70 | 0.069 | 0.821 |
| CK (IU/L) | 115.10 ± 57.58 | 109.20 ± 44.98 | 0.401 | 101.23 ± 44.22 | 117.18 ± 52.91 | 0.315 | 0.208 |
| LD (IU/L) | 420.73 ± 72.99 | 418.90 ± 77.68 | 0.835 | 393.45 ± 69.81 | 400.80 ± 54.38 | 0.323 | 0.423 |
| SG (1.005~1.030) | 1.02 ± 0.01 | 1.02 ± 0.01 | 0.941 | 1.02 ± 0.01 | 1.02 ±0.01 | 0.967 | 0.937 |
| pH (4.5~9.0) | 6.19 ± 0.78 | 6.18 ± 0.81 | 0.936 | 6.21 ± 0.91 | 6.13 ± 0.94 | 0.531 | 0.719 |

Values are presented as mean ± standard deviation.

[1] $p$-value was measured by a paired t-test

[2] $p$-value was measured by an independent t-test