

## Supplementary Materials

**Table S1.** Biochemistry test results of subjects after 4 weeks of JGT administrations.

Variables	Treatment	JGT	Placebo	Reference range
Total protein (g/dL)	Before (all)	7.31 ± 0.49	7.38 ± 0.39	6.5 ~ 8.5
	2-30s	7.24 ± 0.55	7.54 ± 0.39	6.5 ~ 8.4
	40s	7.25 ± 0.37	7.05 ± 0.26	6.7 ~ 7.8
	5-60s	7.37 ± 0.49	7.36 ± 0.33	7.0 ~ 8.5
	After (all)	7.53 ± 0.41	7.52 ± 0.37	7.0 ~ 8.4
	2-30s	7.60 ± 0.42	7.52 ± 0.36	7.0 ~ 8.3
	40s	7.58 ± 0.47	7.40 ± 0.34	7.0 ~ 8.4
	5-60s	7.47 ± 0.32	7.56 ± 0.35	7.1 ~ 8.0
Albumin (g/dL)	Before (all)	4.40 ± 0.29	4.50 ± 0.29	3.8 ~ 5.0
	2-30s	4.38 ± 0.31	4.73 ± 0.21	4.0 ~ 5.0
	40s	4.32 ± 0.18	4.10 ± 0.21	3.8 ~ 4.5
	5-60s	4.46 ± 0.29	4.44 ± 0.16	4.0 ~ 5.0
	After (all)	4.49 ± 0.26	4.48 ± 0.26	4.0 ~ 5.1
	2-30s	4.55 ± 0.33	4.61 ± 0.25	4.0 ~ 5.1
	40s	4.45 ± 0.24	4.20 ± 0.22	3.9 ~ 4.9
	5-60s	4.47 ± 0.18	4.46 ± 0.18	4.2 ~ 4.7
A/G ratio	Before (all)	1.54 ± 0.18	1.58 ± 0.21	1.1 ~ 1.9
	2-30s	1.54 ± 0.14	1.70 ± 0.15	1.3 ~ 1.9
	40s	1.50 ± 0.22	1.45 ± 0.30	1.1 ~ 1.9
	5-60s	1.55 ± 0.15	1.52 ± 0.13	1.3 ~ 1.8
	After (all)	1.49 ± 0.14	1.49 ± 0.24	1.0 ~ 1.9
	2-30s	1.47 ± 0.15	1.61 ± 0.19	1.2 ~ 1.9
	40s	1.43 ± 0.09	1.38 ± 0.30	1.0 ~ 1.8
	5-60s	1.51 ± 0.13	1.42 ± 0.18	1.0 ~ 1.7
AST (IU/L)	Before (all)	22.17 ± 6.67	20.56 ± 5.12	13 ~ 38
	2-30s	18.42 ± 4.50	18.30 ± 2.45	13 ~ 28
	40s	18.83 ± 2.97	18.50 ± 3.64	13 ~ 23
	5-60s	26.36 ± 6.51	23.36 ± 5.73	15 ~ 38
	After (all)	23.50 ± 6.14	21.24 ± 4.10	15 ~ 38
	2-30s	18.57 ± 1.40	18.6 ± 2.73	15 ~ 23
	40s	22.00 ± 4.83	19.75 ± 3.30	16 ~ 29
	5-60s	27.45 ± 5.71	24.18 ± 3.27	17 ~ 38
ALT (IU/L)	Before (all)	16.67 ± 8.91	16.08 ± 5.56	6 ~ 28
	2-30s	12.14 ± 2.47	14.5 ± 5.52	6 ~ 26
	40s	12.17 ± 2.11	15.25 ± 4.66	9 ~ 22
	5-60s	22.00 ± 10.34	17.82 ± 5.13	10 ~ 28
	After (all)	18.54 ± 9.85	16.92 ± 4.19	9 ~ 38
	2-30s	13.00 ± 2.39	14.60 ± 3.61	10 ~ 21
	40s	16.33 ± 5.06	18.00 ± 2.24	11 ~ 26
	5-60s	23.27 ± 11.85	18.63 ± 4.05	12 ~ 38
ALP (IU/L)	Before (all)	60.13 ± 18.61	57.76 ± 14.49	26 ~ 107
	2-30s	55.57 ± 10.08	52.90 ± 8.62	43 ~ 73
	40s	49.66 ± 18.61	49.00 ± 5.61	26 ~ 87
	5-60s	68.73 ± 17.99	65.27 ± 16.48	37 ~ 107
	After (all)	62.46 ± 18.43	57.60 ± 15.56	30 ~ 105
	2-30s	57.90 ± 6.06	51.30 ± 6.39	43 ~ 64
	40s	55.33 ± 23.74	49.00 ± 5.61	30 ~ 105
	5-60s	19.91 ± 14.77	22.36 ± 19.13	33 ~ 103
γ-GTP (IU/L)	Before (all)	16.54 ± 11.22	19.24 ± 16.24	7 ~ 80
	2-30s	14.29 ± 5.90	18.30 ± 14.14	7 ~ 58

	40s	13.00 ± 1.63	13.00 ± 3.08	10 ~ 17
	5-60s	19.91 ± 14.77	22.36 ± 19.13	9 ~ 80
Total Cholesterol (mg/dL)	After (all)	18.87 ± 11.38	19.68 ± 14.92	8 ~ 74
	2-30s	16.14 ± 6.79	18.80 ± 13.01	8 ~ 54
	40s	15.00 ± 6.81	14.75 ± 5.12	10 ~ 30
	5-60s	22.73 ± 17.73	22.27 ± 17.50	10 ~ 74
	Before (all)	199.29 ± 42.11	185.36 ± 31.86	129 ~ 243
	2-30s	172.86 ± 22.82	171.00 ± 23.96	129 ~ 209
	40s	184.50 ± 19.92	177.00 ± 18.32	146 ~ 204
	5-60s	224.18 ± 44.46	201.45 ± 33.16	139 ~ 243
Triglyceride (mg/dL)	After (all)	209.42 ± 49.79	180.76 ± 26.73	133 ~ 259
	2-30s	195.86 ± 41.40	167.30 ± 18.36	140 ~ 259
	40s	191.33 ± 18.34	163.00 ± 16.34	136 ~ 221
	5-60s	227.90 ± 57.20	199.45 ± 22.95	154 ~ 247
	Before (all)	120.92 ± 134.28	104.76 ± 49.74	33 ~ 256
	2-30s	71.14 ± 21.13	86.00 ± 26.44	41 ~ 121
	40s	85.33 ± 22.51	100.00 ± 30.62	51 ~ 132
	5-60s	172.00 ± 179.62	124.45 ± 60.58	33 ~ 256
Glucose (mg/dL)	After (all)	114.17 ± 82.67	107.24 ± 51.48	42 ~ 212
	2-30s	72.14 ± 18.51	83.90 ± 29.48	44 ~ 133
	40s	90.67 ± 16.23	130.25 ± 48.06	68 ~ 198
	5-60s	153.73 ± 104.59	120.09 ± 57.43	42 ~ 212
	Before (all)	93.29 ± 10.92	92.00 ± 8.50	74 ~ 136
	2-30s	90.14 ± 5.44	89.50 ± 9.69	74 ~ 107
	40s	91.00 ± 4.40	94.75 ± 6.30	84 ~ 102
	5-60s	96.55 ± 14.14	93.27 ± 6.93	82 ~ 136
Creatinine (mg/dL)	After (all)	95.96 ± 10.45	94.46 ± 9.72	63 ~ 112
	2-30s	91.57 ± 10.38	90.30 ± 11.12	63 ~ 106
	40s	96.67 ± 7.13	96.75 ± 5.93	82 ~ 103
	5-60s	98.36 ± 10.67	97.82 ± 7.21	82 ~ 112
	Before (all)	0.77 ± 0.13	0.81 ± 0.14	0.59 ~ 1.09
	2-30s	0.65 ± 0.08	0.80 ± 0.12	0.59 ~ 1.09
	40s	0.82 ± 0.05	0.79 ± 0.06	0.70 ~ 0.85
	5-60s	0.84 ± 0.11	0.84 ± 0.17	0.70 ~ 1.04
BUN (mg/dL)	After (all)	0.81 ± 0.10	0.82 ± 0.13	0.59 ~ 1.10
	2-30s	0.71 ± 0.06	0.83 ± 0.12	0.59 ~ 1.10
	40s	0.82 ± 0.05	0.78 ± 0.06	0.72 ~ 0.87
	5-60s	0.87 ± 0.09	0.85 ± 0.16	0.70 ~ 0.99
	Before (all)	11.83 ± 3.39	12.30 ± 3.64	5.5 ~ 21.8
	2-30s	10.44 ± 2.01	10.50 ± 3.20	5.5 ~ 14.6
	40s	11.70 ± 3.13	13.00 ± 2.00	7.3 ~ 16.9
	5-60s	12.78 ± 3.45	13.67 ± 3.64	7.6 ~ 21.8
	After (all)	11.66 ± 2.53	12.63 ± 3.84	6.0 ~ 22.5
	2-30s	11.56 ± 2.27	10.85 ± 3.64	6.0 ~ 18.6
	40s	9.95 ± 1.67	11.42 ± 1.96	7.7 ~ 14.7
	5-60s	12.66 ± 2.46	14.69 ± 3.34	9.7 ~ 22.5

Data are expressed as mean ± SD. A/G, albumin to globulin ratio; AST, aspartate aminotransferase; ALT, alanine aminotransferase; ALP, alkaline phosphatase; γ-GTP, gamma-glutamyl transpeptidase; BUN, blood urea nitrogen.

**Table S2.** Hematological test results of subjects after 4 weeks of JGT administrations.

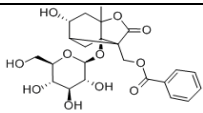
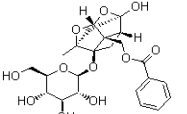
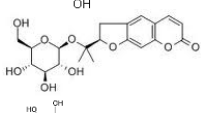
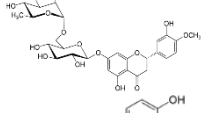
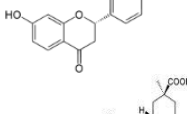
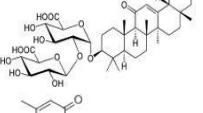
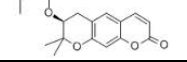
Variables	Treatment	JGT	Placebo	Reference range
WBC (102/ $\mu$ L)	Before	60.33 $\pm$ 16.18	58.04 $\pm$ 14.07	40 ~ 103
	After	56.58 $\pm$ 12.11	58.40 $\pm$ 15.54	31~ 95
Segment (%)	Before	55.40 $\pm$ 8.17	55.13 $\pm$ 7.05	33.5 ~ 66.9
	After	52.72 $\pm$ 8.12	55.93 $\pm$ 9.16	33.4 ~ 71.8
Monocyte (%)	Before	4.66 $\pm$ 2.04	4.84 $\pm$ 2.37	1.4 ~ 9.4
	After	5.08 $\pm$ 2.28	4.66 $\pm$ 2.52	2.0 ~ 8.7
Lymphocyte (%)	Before	41.61 $\pm$ 7.20	38.56 $\pm$ 5.72	30.9 ~ 54.4
	After	40.56 $\pm$ 6.68	38.23 $\pm$ 5.43	27.0 ~ 56.6
Hemoglobin (104/ $\mu$ L)	Before	12.94 $\pm$ 1.65	12.95 $\pm$ 1.37	9.4 ~ 13.9
	After	12.90 $\pm$ 1.57	13.0 $\pm$ 1.41	9.3 ~ 13.8
RBC	Before	402.6 $\pm$ 34.0	404.4 $\pm$ 32.4	373 ~ 492
	After	385.2 $\pm$ 33.7	399.8 $\pm$ 40.6	378 ~ 491
Hematocrit (%)	Before	37.59 $\pm$ 7.53	38.83 $\pm$ 3.40	29.3 ~ 44.4
	After	37.75 $\pm$ 7.51	38.80 $\pm$ 3.67	25.7 ~ 44.7
ESR (mm/hr)	Before	11.77 $\pm$ 9.61	11.64 $\pm$ 8.32	3 ~ 28
	After	11.33 $\pm$ 7.80	13.40 $\pm$ 9.61	5 ~ 23
Platelets (104/ $\mu$ L)	Before	23.27 $\pm$ 5.46	23.87 $\pm$ 5.11	19.3 ~ 31.1
	After	23.99 $\pm$ 5.11	24.00 $\pm$ 5.71	17.8 ~ 33.6
MCV (fl)	Before	86.95 $\pm$ 15.86	89.57 $\pm$ 7.30	66.3 ~ 98.0
	After	87.27 $\pm$ 14.76	89.52 $\pm$ 6.99	66.0 ~ 102.0
MCH (%)	Before	28.93 $\pm$ 5.49	29.88 $\pm$ 2.76	20.0 ~ 34.7
	After	29.16 $\pm$ 5.19	33.32 $\pm$ 0.91	20.7 ~ 34.2
RDW (%)	Before	12.72 $\pm$ 2.64	12.56 $\pm$ 1.33	10.6 ~ 16.6
	After	12.13 $\pm$ 2.45	12.72 $\pm$ 1.63	10.0 ~ 16.5

Data are expressed as mean  $\pm$  SD. WBC, white blood cells; RBC, red blood cells; ESR, erythrocyte sedimentation rate; MCV, mean corpuscular volume; MCH, mean corpuscular hemoglobin; RDW, red cell distribution width.

**Table S3.** Composition of JGT

Herbal name	Scientific name	Part of use	Place of origin	Amount (g)
Gastrodiae Rhizoma	<i>Gastrodia elata</i> Bl.	Rhizoma	S. Korea (Muju)	1.2
Adenophorae Radix	<i>Adenophora triphylla</i> var. <i>japonica</i> Hara	Root	S. Korea (Jinan)	1.2
Hoelen	<i>Poria cocos</i> Wolf	Mushroom	S. Korea (Bonghwa)	0.5
Atractylodis Rhizoma	<i>Atractylodes japonica</i> Koidz.	Root	S. Korea (Bonghwa)	0.5
Citrus Pericarpium	<i>Citrus unshiu</i> Markovich	Peel	S. Korea (Seoguiipo)	0.4
Pinelliae Rhizoma	<i>Pinellia ternata</i> (Thunb.) Breitenbach	Rhizoma	S. Korea (Seoguiipo)	0.4
Paeoniae Radix Alba	<i>Paeonia lactiflora</i> Pall.	Root	S. Korea (Andong)	0.4
Rehmanniae Radix	<i>Rehmannia glutinosa</i> Liboschitz	Root	S. Korea (Andong)	0.4
Angelicae Gigantis Radix	<i>Angelica gigas</i> Nakai	Root	S. Korea (Yeongju)	0.4
Liriope Tuber	<i>Liriope platyphylla</i> Wang et Tang	Root	S. Korea (Milyang)	0.4
Cnidii Rhizoma	<i>Cnidium officinale</i> Makino	Root	S. Korea (Bonghwa)	0.4
Jujube Fructus	<i>Zizyphus jujuba</i> Miller var. <i>inermis</i> Rehder	Fruits	S. Korea (Boeun)	0.4
Zingiberis Rhizoma	<i>Zingiber officinale</i> Rosc.	Rhizoma	S. Korea (Seosan)	0.4
Schizonepetae Spica	<i>Schizonepeta tenuifolia</i> Briquet	Herba	S. Korea (Bonghwa)	0.4
Saposhnikoviae Radix	<i>Saposhnikovia divaricata</i> Schischkin	Root	S. Korea (Yeongju)	0.4
Polygalae Radix	<i>Polygala tenuifolia</i> Willd.	Root	China (Yunnan)	0.1
Glycyrrhizae Radix	<i>Glycyrrhiza uralensis</i> Fisch.	Root	China (Neimenggu)	0.1
Menthae Herba	<i>Mentha arvensis</i> Linne var. <i>piperascens</i> Malinvaud	Leaf	S. Korea (Jecheon)	0.01
Total				8.0

**Table S4.** Retention time, linear range, regression equation, correlation coefficient, and contents of seven marker compounds from JGT

Chemical constructions	Compounds	UV (nm)	Retention time (min)	Linear range (µg/mL)	Regression equation (y=ax+b)	Correlation coefficient (r <sup>2</sup> )	Contents Mean±SD (µg /mg)
	Albiflorin	230	14.3	2.0~150	$y = 10.0540 x + 16.169158$	0.999	2.0018 ± 0.0402
	Paeoniflorin	230	15.8	2.0~150	$y = 15.0484 x + 11.0123$	0.999	92.4079 ± 0.3724
	Nodakenin	330	23.7	1.0~75.0	$y = 55.2948 x + 70.4863$	0.999	0.1465 ± 0.0063
	Hesperidin	280	26.9	2.0~150	$y = 17.6242 x + 45.6974$	0.999	1.1832 ± 0.0981
	Liquirtigenin	280	33.4	1.0~75.0	$y = 37.368 x + 44.9646$	0.999	1.0409 ± 0.0544
	Glycyrrhizinic acid	254	45.3	2.0~150	$y = 5.7376 x + 8.2351$	0.999	1.1281 ± 0.0739
	Decursin	330	50.4	1.0~75.0	$y = 42.7344 x + 16.0783$	1.000	0.0170 ± 0.0009