Table 1. Identification of potential biomarkers, change trend and fold change

	RT(min)	Measured Mass (Da)	VIP	Mass error (ppm)	Identification	Change trend			Fold Change	
						M[a]	H[b]	Z[c]	H/M	Z/M
ESI+	8.45	373.2734	15.15	-0.86	Cervonoyl ethanolamide	↑	-	-	-	-
	2.17	190.0500	14.16	0.69	Kynurenic acid	↑	↓*	↓*	0.03	0.05
	8.05	371.2583	13.05	0.62	3-Oxo-4,6-choladienoic acid	↑	↓*	↓*	0.25	0.32
	1.29	206.0451	10.85	1.53	Xanthurenic acid	↑	↓*	↓*	0.44	0.44
	0.86	114.0665	10.29	2.74	Creatinine	↑	↓*	↓*	0.14	0.23
	6.35	299.1276	9.87	-0.62	Enterolactone	↑	-	-	-	-
	2.74	194.0817	9.31	2.74	Phenylacetylglycine	↓	↑*	↑**	2.22	1.75
	1.15	220.1182	9.19	1.14	Pantothenic acid	↑	↓**	↓*	0.51	0.60
	2.38	340.1051	9.12	7.08	6-Hydroxy-5-methoxyindole glucuronide	↑	↓*	-	1.17	-
	8.58	391.2843	7.91	-0.09	12-Ketodeoxycholic acid	↑	↓*	↓*	0.07	0.21
	7.11	361.2000	7.38	-2.63	Aldosterone	↑	-	-	-	-
	0.61	154.0507	7.13	5.39	6-Methoxy-pyridine-3-carboxylic acid	↓	↑	↑	0.67	1.42
	3.52	181.0866	5.26	3.76	3-Methoxybenzenepropanoic acid	↓	↑*	↑	12.97	17.81
	4.40	123.0443	4.13	1.99	4-Hydroxybenzaldehyde	↑	↓*	-	0.60	-
	2.50	122.0277	3.52	5.53	*L*-Cysteine	↓	-	-	-	-
	7.97	595.3501	3.26	1.75	*L*-Urobilin	↑	-	-	-	-
	1.19	210.0769	3.15	3.88	Hydroxyphenylacetylglycine	↑	-	-	-	-
	2.27	148.0403	2.86	6.73	Indole-5,6-quinone	↓	↑	↑	2.35	1.95
	3.97	312.1303	2.83	0.02	N_2,N_2-Dimethylguanosine	↓	-	-	-	-
	7.58	466.3189	2.75	5.55	Glycocholic acid	↑	-	-	-	-
	0.76	184.0600	2.74	-2.63	4-Pyridoxic acid	↓	↑*	-	1.91	-
	2.79	162.0553	2.54	2.14	Indole-3-carboxylic acid	↑	↓	↓*	0.72	0.40

	2.31	180.0658	2.54	1.28	Hippuric acid	↑	↓	↓	0.46	0.76
	3.18	132.1021	2.12	1.48	*L*-Leucine	↑	-	-	-	-
	6.31	164.0381	1.91	3.11	Acetylcysteine	↓	↑**	↑*	16.69	9.91
	2.33	192.0663	1.77	3.81	5-Hydroxyindoleacetic acid	↑	-	-	-	-
	1.62	160.0968	1.76	-0.12	Valerylglycine	↓	↑*	↑*	1.99	1.70
	1.77	121.0649	1.54	0.90	Phenylacetaldehyde	↑	-	-	-	-
	0.74	151.0621	1.37	4.06	7-Methylhypoxanthine	↓	-	-	-	-
	1.02	127.0506	1.25	3.12	Thymine	↓	↑*	-	7.32	-
	5.46	118.0331	1.11	8.38	Homocysteine thiolactone	↓	↑**	↑**	8.80	5.42
ESI-	5.01	212.0020	10.12	-1.42	Indoxyl sulfate	↓	-	↑*	-	11.19
	6.94	187.0067	7.39	-1.89	*p*-Cresol sulfate	↓	-	-	-	-
	9.01	407.2796	6.05	-1.71	Cholic acid	↑	↓*	↓*	0.11	0.08
	6.03	253.0496	3.87	-1.51	5-L-Glutamyl-taurine	↑	↓	↓	0.01	0.22
	4.69	157.0862	3.52	-5.21	3-Oxooctanoic acid	↓	-	↑**	-	1.73
	9.41	391.2846	3.49	-2.00	Deoxycholic acid	↑	↓*	↓*	0.07	0.13
	4.29	201.1125	2.79	-3.64	Sebacic acid	↓	-	-	-	-
	1.27	138.0556	2.51	-3.64	3,4-Dihydroxybenzylamine	↓	-	-	-	-
	4.04	283.0819	2.22	-1.51	p-Cresol glucuronide	↓	-	-	-	-
	2.99	165.0557	1.81	-0.11	Phenyllactic acid	↑	-	-	-	-
	4.12	175.0243	1.77	-2.93	D-Glucurono-6,3-lactone	↓	-	-	-	-
	5.32	297.0974	1.60	-2.11	2-Phenylethanol glucuronide	↑	-	-	-	-
	0.47	243.0610	1.41	-5.18	Uridine	↓	↓	↓	-	-
	0.74	191.0197	1.16	-0.40	Citric acid	↓	↓	↓	-	-

[a] Metabolite change trend in M group vs. control group; [b] Metabolite change trend in H group vs. M group; [c] Metabolite change trend in Z group vs. M group; "-" represents no content change between Z/H group and M group; up-regulated (↑*) with p-value < 0.05; up-regulated (↑**) with p-value < 0.01; down-regulated (↓*) with p-value < 0.05; down-regulated (↓**) with p-value

< 0.01; potential therapeutic biomarkers were marked by red arrows/asterisks, which reflected the protective effectiveness of *G. jasminoides* on T2D rats.