

Table 1

Effects of cell viability of Na₂S₂O₄ solution injury on PC12 cell preprotected 2 h by 5% NMT and its four single herbs drug-containing

Dosing time point (h)	Cell vitality of NMT		Cell vitality of rhubarb		Cell vitality of Ginseng		Cell vitality of Pueraria		Cell vitality of Chuanxiong	
	OD _{490nm}	Cell	OD _{490nm}	Cell	OD _{490nm}	Cell	OD _{490nm}	Cell	OD _{490nm}	Cell
		survival		survival		survival		survival		survival
		rate		rate		rate		rate		rate
		(%)		(%)		(%)		(%)		(%)
0	0.2425 ± 0.0116	45.44	0.3313 ± 0.0075	52.22	0.3015 ± 0.0288	52.97	0.2868 ± 0.0150	51.73	0.3670 ± 0.0175	49.45
0.08	0.2460 ± 0.0229	46.40	0.3597 ± 0.0190	58.51	0.2870 ± 0.0563	49.38	0.2870 ± 0.0563	51.79	0.3657 ± 0.0777	49.21
0.25	0.2805 ± 0.0400	47.86	0.3097 ± 0.0222	58.60	0.2728 ± 0.0674	52.85	0.2728 ± 0.0674	48.14	0.3830 ± 0.0278	52.38
0.5	0.2560 ± 0.0278	49.14	0.3603 ± 0.0401	58.65	0.3150 ± 0.0133	56.32	0.3150 ± 0.0133	58.97	0.3657 ± 0.0227	59.21
0.75	0.2598 ± 0.0346	50.17	0.3603 ± 0.0331	58.65	0.3198 ± 0.0466	57.50	0.3198 ± 0.0466	60.19	0.4253 ± 0.0499	60.12
1	0.2648 ± 0.0216	51.54	0.3757 ± 0.0186	62.06	0.2980 ± 0.0130	52.11	0.2980 ± 0.0130	61.62	0.4207 ± 0.0715	59.27
1.5	0.2550 ± 0.0143	48.87	0.3253 ± 0.0554	50.89	0.3668 ± 0.0138	69.14	0.3278 ± 0.0166	62.24	0.4363 ± 0.0678	62.13
2	0.3118 ± 0.0548	64.43	0.3097 ± 0.0786	47.41	0.3240 ± 0.0188	58.55	0.3055 ± 0.0221	56.54	0.3220 ± 0.0360	41.22
4	0.2768 ± 0.0454	54.83	0.3140 ± 0.0674	48.37	0.3485 ± 0.0265	64.62	0.2985 ± 0.0336	54.74	0.4110 ± 0.0888	57.50
6	0.2575 ± 0.0331	49.55	0.3020 ± 0.0928	45.71	0.3420 ± 0.0294	63.01	0.3218 ± 0.0212	60.71	0.3717 ± 0.0180	50.30
8	0.2670 ± 0.0327	52.16	0.2797 ± 0.0343	40.75	0.3045 ± 0.0638	53.72	0.3045 ± 0.0638	56.28	0.3603 ± 0.0617	48.23
12	0.2310 ± 0.0309	42.29	0.2813 ± 0.0023	41.12	0.2760 ± 0.0316	46.65	0.2973 ± 0.0402	54.42	0.2880 ± 0.0105	35.00

serum of different time points ($\bar{x}\pm s,n=4$) .

Table 2

Effects of cell viability of Glu solution injury on PC12 cell preprotected 2 h by 5% NMT and its four single herbs drug-containing serum of different time points ($\bar{x}\pm s,n=4$) .

Dosing time point (h)	Cell vitality of NMT		Cell vitality of rhubarb		Cell vitality of Ginseng		Cell vitality of Pueraria		Cell vitality of Chuanxiong	
	OD _{490nm}	Cell	OD _{490nm}	Cell	OD _{490nm}	Cell	OD _{490nm}	Cell	OD _{490nm}	Cell
		survival		survival		survival		survival		survival
		rate		rate		rate		rate		rate
		(%)		(%)		(%)		(%)		(%)
0	0.4465 ± 0.0217	52.24	0.3773 ± 0.0240	61.38	0.3173 ± 0.0266	57.27	0.2118 ± 0.0162	35.98	0.2568 ± 0.0067	45.89
0.08	0.4908 ± 0.0289	58.45	0.3643 ± 0.0775	58.57	0.2988 ± 0.0618	52.49	0.1458 ± 0.0109	17.25	0.3250 ± 0.1127	64.13
0.25	0.5183 ± 0.0146	62.31	0.3630 ± 0.0255	58.29	0.3583 ± 0.0942	67.77	0.1418 ± 0.0156	16.11	0.2975 ± 0.0698	56.78
0.5	0.4668 ± 0.0221	55.08	0.3693 ± 0.1270	59.65	0.3170 ± 0.0326	57.18	0.1893 ± 0.0182	29.60	0.3038 ± 0.0765	58.45

0.75	0.4990 ± 0.0100	59.61	0.3870 ± 0.0240	63.47	0.3105 ± 0.0660	55.51	0.2338 ± 0.0709	42.23	0.3035 ± 0.0441	58.38
1	0.5383 ± 0.0109	65.11	0.4477 ± 0.0650	76.59	0.3203 ± 0.0891	58.01	0.1635 ± 0.0334	22.29	0.3343 ± 0.0214	66.60
1.5	0.5100 ± 0.0217	61.15	0.4220 ± 0.0296	71.04	0.3023 ± 0.0842	53.39	0.2000 ± 0.0360	32.65	0.3070 ± 0.0429	59.32
2	0.5273 ± 0.0340	63.57	0.3670 ± 0.0416	69.15	0.3267 ± 0.0297	59.66	0.2078 ± 0.0136	34.85	0.3228 ± 0.0577	58.53
4	0.5193 ± 0.0126	62.45	0.4007 ± 0.1277	66.43	0.2935 ± 0.0657	51.14	0.2698 ± 0.0573	52.45	0.2990 ± 0.0512	57.18
6	0.5063 ± 0.0118	60.62	0.3813 ± 0.0194	62.25	0.2020 ± 0.0576	27.65	0.2595 ± 0.0564	49.54	0.2510 ± 0.0640	44.36
8	0.5030 ± 0.0068	60.17	0.3277 ± 0.1029	50.65	0.1840 ± 0.0366	23.03	0.2610 ± 0.0485	49.96	0.2615 ± 0.0496	47.16
12	0.4530 ± 0.0377	53.16	0.3433 ± 0.0673	54.03	0.1815 ± 0.0493	22.38	0.2248 ± 0.0511	39.67	0.2230 ± 0.0631	36.87

Table 3

Effects of cell viability of H₂O₂ solution injury on PC12 cell preprotected 12 h by 5% NMT and its four single herbs drug-containing serum of different time points ($\bar{x}\pm s,n=4$) .

Dosing time point (h)	Cell vitality of NMT		Cell vitality of rhubarb		Cell vitality of Ginseng		Cell vitality of Pueraria		Cell vitality of Chuanxiong	
	OD _{490nm}	Cell	OD _{490nm}	Cell	OD _{490nm}	Cell	OD _{490nm}	Cell	OD _{490nm}	Cell
		survival		survival		survival		survival		survival
		rate		rate		rate		rate		rate
		(%)		(%)		(%)		(%)		(%)
0	0.4927 ± 0.0333	47.28	0.8163 ± 0.1008	57.66	0.4250 ± 0.0187	67.80	0.1920 ± 0.0359	48.13	0.3220 ± 0.0097	41.69
0.08	0.5097 ± 0.0549	49.37	0.9793 ± 0.1220	70.76	0.4517 ± 0.0095	73.25	0.1740 ± 0.0101	41.18	0.3028 ± 0.0481	38.30
0.25	0.4963 ± 0.0249	47.73	0.9657 ± 0.0922	69.66	0.4930 ± 0.0167	81.69	0.2293 ± 0.0231	62.55	0.3443 ± 0.0203	45.60
0.5	0.5003 ± 0.0227	48.22	0.8813 ± 0.2103	62.88	0.4533 ± 0.0725	73.59	0.2390 ± 0.0190	66.28	0.3865 ± 0.0229	53.03
0.75	0.5440 ± 0.0344	53.58	1.0260 ± 0.0267	74.50	0.3780 ± 0.0168	72.20	0.2257 ± 0.0047	61.13	0.3440 ± 0.0144	45.56
1	0.5123 ± 0.0076	49.69	0.9257 ± 0.0748	66.44	0.4413 ± 0.0216	71.14	0.2293 ± 0.0146	62.55	0.3608 ± 0.0581	48.50
1.5	0.5510 ± 0.0610	54.44	0.9343 ± 0.0455	67.14	0.3720 ± 0.0504	56.98	0.2413 ± 0.0031	67.18	0.3428 ± 0.0190	45.34
2	0.5817 ± 0.0265	58.21	0.8250 ± 0.1821	58.36	0.3610 ± 0.0035	54.73	0.2230 ± 0.0132	60.10	0.2878 ± 0.0456	45.06
4	0.4900 ± 0.0731	46.95	0.6903 ± 0.0721	47.54	0.2897 ± 0.0735	40.16	0.1943 ± 0.0112	59.03	0.3393 ± 0.1006	44.72
6	0.4550 ± 0.0427	42.65	0.6170 ± 0.0282	41.64	0.3927 ± 0.0416	61.20	0.2067 ± 0.0163	53.80	0.1968 ± 0.0583	19.66
8	0.4940 ± 0.0739	47.44	0.6330 ± 0.0235	42.93	0.3045 ± 0.0120	43.19	0.2063 ± 0.0131	53.67	0.2115 ± 0.0273	22.25
12	0.4813 ± 0.0306	45.89	0.5637 ± 0.0417	37.36	0.2060 ± 0.0166	23.08	0.1687 ± 0.0265	39.12	0.1545 ± 0.0075	12.23

Table 4

Effects of cell viability of KCl solution injury on PC12 cell preprotected 12 h by 5% 5% NMT and its four single herbs drug-containing

serum of different time points ($\bar{x}\pm s,n=4$) .

Table 5 LC-high resolution-MS/MS analysis of chemical compounds in Nao-Mai-Tong extract

Peak No.	$t_{R(min)}$	Compounds	Molecular formula	Precursor ions(Error:ppm)	Source
1	3.22	3'-MethoxyPuerarin-6"-O-Glc	C ₂₈ H ₃₂ O ₁₅	609.1799(-2.41)[M+H] ⁺	g
2	5.00	3'-Hydroxy puerarin 4'-O-Glc	C ₂₇ H ₃₀ O ₁₅	593.1504 (0.40)[M-H] ⁻	g
3	5.52	Puerarin-Glc	C ₂₇ H ₃₀ O ₁₄	579.1695 (-3.25)[M+H] ⁺	g
4	6.39	3'-MethoxyPuerarin-4'-O-Glc	C ₂₈ H ₃₂ O ₁₅	607.1663(0.04)[M-H] ⁻	g
5	7.53	Daidzin-4'-O-Glc	C ₂₇ H ₃₀ O ₁₄	579.1695 (-3.25)[M+H] ⁺	g
6	9.40	3'-Hydroxypuerarin*	C ₂₁ H ₂₀ O ₁₀	431.0971 (-1.67)[M-H] ⁻	g
7	10.38	3'-Hydroxypuerarin-Xyl/isomer	C ₂₆ H ₂₈ O ₁₄	565.1538 (-3.42)[M+H] ⁺	g
8	10.54	Catechin	C ₁₅ H ₁₄ O ₆	289.0714 (2.54)[M-H] ⁻	d
9	11.69	3'-Hydroxypuerarin-Xyl/isomer	C ₂₆ H ₂₈ O ₁₄	565.1538 (-3.42)[M+H] ⁺	g
10	14.70	Puerarin*	C ₂₁ H ₂₀ O ₉	415.1026 (-0.74)[M-H] ⁻	g
11	15.47	Puerarin-Xyl	C ₂₆ H ₂₈ O ₁₃	549.1591 (-3.12)[M+H] ⁺	g
12	16.50	3'-Methoxypuerarin*	C ₂₂ H ₂₂ O ₁₀	445.1131 (-0.84)[M-H] ⁻	g
13	16.99	Puerarin-Api	C ₂₆ H ₂₈ O ₁₃	549.1591 (-3.12)[M+H] ⁺	g
14	18.63	3'-Methoxypuerarin-Api	C ₂₇ H ₃₀ O ₁₄	579.1695 (-3.25)[M+H] ⁺	g
15	20.97	Daidzin*	C ₂₁ H ₂₀ O ₉	417.1170 (-3.72)[M+H] ⁺	g
16	22.63	Genistein-8-C-Glc-Api /isomer	C ₂₆ H ₂₈ O ₁₄	565.1538 (-3.42)[M+H] ⁺	g
17	23.36	3'-Methoxydaidzin	C ₂₂ H ₂₂ O ₁₀	447.1275 (-3.63)[M+H] ⁺	g
18	24.08	Genistin-8-C-Glc	C ₂₁ H ₂₀ O ₁₀	431.0970 (-0.63)[M-H] ⁻	g

Dosing time point (h)	Cell vitality of NMT		Cell vitality of rhubarb		Cell vitality of Ginseng		Cell vitality of Pueraria		Cell vitality of Chuanxiong	
	OD _{490nm}	Cell	OD _{490nm}	Cell	OD _{490nm}	Cell	OD _{490nm}	Cell	OD _{490nm}	Cell
		surviv		survival		survival		survival		survival
		al rate		rate		rate		rate		rate
		(%)		(%)		(%)		(%)		(%)
0	0.2842 ± 0.0141	48.44	0.5177 ± 0.0612	56.39	0.3310 ± 0.0445	47.11	0.1770 ± 0.0137	38.65	0.3710 ± 0.0490	56.56
0.08	0.2893 ± 0.0044	49.68	0.5173 ± 0.0722	56.34	0.3127 ± 0.0256	43.49	0.1400 ± 0.0132	25.82	0.3710 ± 0.0078	56.56
0.25	0.2980 ± 0.0153	51.76	0.5213 ± 0.0574	56.88	0.3527 ± 0.0241	43.38	0.1553 ± 0.0071	31.14	0.4037 ± 0.0817	63.15
0.5	0.3088 ± 0.0115	54.36	0.4050 ± 0.0322	61.39	0.3123 ± 0.0175	43.42	0.1533 ± 0.0150	30.44	0.4117 ± 0.0165	64.76
0.75	0.3092 ± 0.0236	54.44	0.6167 ± 0.1104	69.57	0.3440 ± 0.0368	49.67	0.1763 ± 0.0129	38.42	0.4327 ± 0.0450	69.00
1	0.4022 ± 0.0064	76.76	0.5723 ± 0.0844	63.66	0.3787 ± 0.0633	56.51	0.1550 ± 0.0036	31.02	0.4467 ± 0.0260	71.82
1.5	0.3742 ± 0.0216	70.04	0.5610 ± 0.1216	62.16	0.3370 ± 0.0250	48.29	0.2167 ± 0.0072	52.40	0.4627 ± 0.0115	75.05
2	0.3487 ± 0.0175	63.92	0.4663 ± 0.0560	49.56	0.2993 ± 0.0315	40.86	0.2237 ± 0.0171	54.82	0.4157 ± 0.0124	65.57
4	0.3303 ± 0.0054	59.52	0.5093 ± 0.0486	55.28	0.3077 ± 0.0103	42.50	0.1857 ± 0.0040	41.65	0.4087 ± 0.0163	64.16
6	0.3557 ± 0.0163	65.60	0.3990 ± 0.1066	40.59	0.3117 ± 0.0475	43.29	0.2040 ± 0.0056	48.01	0.3723 ± 0.0212	56.83
8	0.3722 ± 0.0228	69.56	0.3837 ± 0.0499	38.55	0.2943 ± 0.0119	39.87	0.2037 ± 0.0148	47.89	0.3713 ± 0.0319	56.62
12	0.3253 ± 0.0162	58.32	0.4337 ± 0.0180	45.21	0.2897 ± 0.0211	38.95	0.1753 ± 0.0170	38.07	0.3353 ± 0.0612	49.36

19	24.61	Genistein-8-C-Glc-API /isomer	C ₂₆ H ₂₈ O ₁₄	565.1538 (-3.42)[M+H] ⁺	g
20	25.44	Ferulic Acid*	C ₁₀ H ₁₀ O ₄	195.0648 (-4.79)[M+H] ⁺	c
21	26.18	Aloe-emodin-8-O-Glc*	C ₂₁ H ₂₀ O ₁₀	431.0974 (-0.98)[M-H] ⁻	d
22	26.25	Pueroside A	C ₂₉ H ₃₄ O ₁₄	605.1866 (0.12)[M-H] ⁻	g
23	26.94	Rhein-8-O-Glc*	C ₂₁ H ₁₈ O ₁₁	445.0768 (0.59)[M-H] ⁻	d
24	26.97	Sennoside B	C ₄₂ H ₃₈ O ₂₀	861.1865 (-1.21)[M-H] ⁻	d
25	28.95	Pueroside D/B	C ₃₀ H ₃₆ O ₁₅	681.2022 (-0.48)[M-H] ⁻	g
26	29.38	Pueroside D/B	C ₂₄ H ₂₆ O ₁₀	681.2022 (-0.48)[M-H] ⁻	g
27	29.60	Formononetin 8-C-Glc -Xyl	C ₂₇ H ₃₀ O ₁₃	563.1746(-2.30)[M+H] ⁺	g
28	29.79	Sennoside C	C ₄₂ H ₄₀ O ₁₉	847.2070 (-1.01)[M-H] ⁻	d
29	29.94	Malonyl-daidzin	C ₂₄ H ₂₂ O ₁₂	503.1172 (-1.20)[M+H] ⁺	g
30	30.25	Formononetin 8-C-Glc -Api	C ₂₇ H ₃₀ O ₁₃	563.1744 (-2.73)[M+H] ⁺	g
31	30.43	4'-Methoxypuerarin	C ₂₂ H ₂₂ O ₉	429.1177 (-1.97)[M-H] ⁻	g
32	30.50	Sennoside A	C ₄₂ H ₃₈ O ₂₀	861.1865 (1.21)[M-H] ⁻	d
33	32.26	Unknown G	C ₅₀ H ₉₂ O ₃₁	616.2745 (-3.42)[M+CO2] ²⁻	r
34	33.56	Dihydroxyginsenoside Rb1/isomer	C ₅₄ H ₉₄ O ₂₅	616.3014 (-1.66)[M+2HCOO] ²⁻	r
35	33.66	N R1/isomer	C ₄₇ H ₈₀ O ₁₈	977.5304 (-1.76)[M+HCOO] ⁻	r
36	33.69	20-Glc-G Rf	C ₄₈ H ₈₂ O ₁₉	1007.5411 (-1.57)[M+HCOO] ⁻	r
37	33.84	Chikusetsusaponin FM1/isomer	C ₅₃ H ₉₂ O ₂₄	601.2964 (-1.22)[M+2HCOO] ²⁻	r
38	34.24	N R1/isomer	C ₄₇ H ₈₀ O ₁₈	977.5304 (-1.76)[M+HCOO] ⁻	r
39	34.39	Senkyunolide F/isomer	C ₁₂ H ₁₄ O ₃	207.1010 (-2.56)[M+H] ⁺	c
40	34.41	Chikusetsusaponin FM1/isomer	C ₅₃ H ₉₂ O ₂₄	601.2960(-1.84)[M+2HCOO] ²⁻	r
41	34.42	Senkyunolide I*	C ₁₂ H ₁₆ O ₄	247.0933 (-3.16)[M+Na] ⁺	c
42	34.48	Sophoraside A	C ₂₄ H ₂₆ O ₁₀	473.1438(-3.09)[M-H] ⁻	g
43	34.61	Dihydroxyginsenoside Rb1 /isomer	C ₅₄ H ₉₄ O ₂₅	616.3014 (-1.56)[M+2HCOO] ²⁻	r
44	35.12	Chikusetsusaponin FM1/isomer	C ₅₃ H ₉₂ O ₂₄	601.2963 (-1.44)[M+2HCOO] ²⁻	r
45	35.48	G Rg1*	C ₄₂ H ₇₂ O ₁₄	845.4881 (-2.08)[M+HCOO] ⁻	r
46	35.55	G Re*	C ₄₈ H ₈₂ O ₁₈	991.5451 (-2.69)[M+HCOO] ⁻	r
47	35.63	Chikusetsusaponin FM1/isomer	C ₅₃ H ₉₂ O ₂₄	601.2960(-1.84)[M+2HCOO] ²⁻	r
48	35.73	Isoswertisin 2"-O-Xyl	C ₂₇ H ₃₀ O ₁₄	579.1694 (-1.34)[M+H] ⁺	g
49	35.87	Ononin	C ₂₂ H ₂₂ O ₉	431.1325 (-2.69)[M+H] ⁺	g
50	36.04	Senkyunolide F/isomer	C12H14O3	207.1011 (-2.47)[M+H] ⁺	c
51	36.50	Daidzein*	C ₁₅ H ₁₀ O ₄	255.0645 (-4.84)[M+H] ⁺	g
52	36.88	Mal-G Rg1/isomer	C ₄₅ H ₇₄ O ₁₇	885.4836 (-1.33)[M-H] ⁻	r

53	36.90	Unknown G	C ₅₄ H ₉₂ O ₂₄	607.2968 (-0.62)[M+2HCOO] ²⁻	r
54	37.52	3'-Methoxydaidzein	C ₁₆ H ₁₂ O ₅	285.0748 (-3.33)[M+H] ⁺	g
55	37.72	Unknown G	C ₅₄ H ₉₂ O ₂₄	607.2962 (-1.53)[M+2HCOO] ²⁻	r
56	37.99	Mal-G Re	C ₅₁ H ₈₄ O ₂₁	1031.5411 (-2.02)[M-H] ⁻	r
57	38.16	Mal-G Rg1/isomer	C ₄₅ H ₇₄ O ₁₇	885.4836 (-1.33)[M-H] ⁻	r
58	39.56	Genkwanin 5-O-primeveroside	C ₂₇ H ₃₀ O ₁₄	579.1691 (-3.04)[M+H] ⁺	g
59	39.79	Formononetin	C ₁₆ H ₁₂ O ₄	267.0655 (-0.88)[M-H] ⁻	d
60	39.86	Unknown triterpenoid saponins	C ₄₈ H ₇₆ O ₂₁	987.4809 (0.21)[M-H] ⁻	—
61	40.03	Emodin-8-O-Glc*	C ₂₁ H ₂₀ O ₁₀	431.0970 (-1.91)[M-H] ⁻	d
62	40.78	Chrysophanol-8-O-Glc*	C ₂₁ H ₂₀ O ₉	415.1024 (-1.22)[M-H] ⁻	d
63	40.96	N R6/R3	C ₄₈ H ₈₂ O ₁₉	1007.5411 (-1.57)[M+HCOO] ⁻	r
64	42.17	G R _{0A}	C ₅₄ H ₈₆ O ₂₄	581.2699 (-1.64)[M-CO2] ²⁻	r
65	42.62	Emodin 8-O-(6'-O-Mal)Glc/isomer	C ₂₄ H ₂₂ O ₁₃	517.0974 (-1.58)[M-H] ⁻	d
66	42.76	G Ra3/isomer	C ₅₉ H ₁₀₀ O ₂₇	1285.6388(-3.59)[M+HCOO] ⁻	r
67	43.66	G Ra0/ Quinquenoside V	C ₆₀ H ₁₀₂ O ₂₈	680.3248(-1.84)[M+2HCOO] ²⁻	r
68	43.70	Emodin 8-O-(6'-O-Mal)Glc/isomer	C ₂₄ H ₂₂ O ₁₃	517.0974 (-1.58)[M-H] ⁻	d
69	44.28	G Rf*	C ₄₂ H ₇₂ O ₁₄	845.4882 (-1.96)[M+HCOO] ⁻	r
70	44.55	5,6-Didehydroginsenoside Rb1	C ₅₄ H ₉₀ O ₂₃	598.2925(-1.28)[M+2HCOO] ²⁻	r
71	44.94	Physcion-8-O-Glc *	C ₂₂ H ₂₂ O ₁₀	445.1137 (0.78)[M-H] ⁻	d
72	45.11	G Ra2	C ₅₈ H ₉₈ O ₂₆	1255.6287 (-2.86)[M+HCOO] ⁻	r
73	45.56	G Ra3/isomer	C ₅₉ H ₁₀₀ O ₂₇	1285.6399(-2.73)[M+HCOO] ⁻	r
74	45.65	G Rb1 *	C ₅₄ H ₉₂ O ₂₃	1107.5920 (-2.81)[M-H] ⁻	r
75	45.65	GF5/F3/N R2	C ₄₁ H ₇₀ O ₁₃	815.4777 (-1.28)[M+HCOO] ⁻	r
76	46.37	Mal-G Rb1	C ₅₇ H ₉₄ O ₂₆	1193.5929 (-2.18)[M-H] ⁻	r
77	46.85	G Rc*	C ₅₃ H ₉₀ O ₂₂	1123.5870 (-2.70)[M+HCOO] ⁻	r
78	46.95	G Ra1	C ₅₈ H ₉₈ O ₂₆	1255.6292 (-2.50)[M+HCOO] ⁻	r
79	47.18	G Rg2*	C ₄₂ H ₇₂ O ₁₃	829.4940 (-0.48)[M+HCOO] ⁻	r
80	47.39	G Rh1	C ₃₆ H ₆₂ O ₉	683.4358 (-1.81)[M+HCOO] ⁻	r
81	47.66	Mal-G Rc	C ₅₆ H ₉₂ O ₂₅	1163.5825 (-2.08)[M-H] ⁻	r
82	48.07	G Ro	C ₄₈ H ₇₆ O ₁₉	955.4881 (-2.26)[M-H] ⁻	r
83	48.34	G Rb2*	C ₅₃ H ₉₀ O ₂₂	1123.5869 (-2.78)[M+HCOO] ⁻	r
84	49.01	Mal-G Rb2	C ₅₆ H ₉₂ O ₂₅	1163.5823 (-2.27)[M-H] ⁻	r

85	49.29	Methyl-Rhein	C ₁₆ H ₁₀ O ₆	297.0394(-3.37)[M-H] ⁻	d
86	49.70	Ac-G Rb1	C ₅₆ H ₉₄ O ₂₄	1195.6090 (-1.80)[M+HCOO] ⁻	r
87	50.67	G F1	C ₃₆ H ₆₂ O ₉	683.4363 (-1.08)[M+HCOO] ⁻	r
88	50.88	Mal-G Rb3/isomer	C ₅₆ H ₉₂ O ₂₅	1163.5824 (-2.18)[M-H] ⁻	r
89	51.15	G Rs1	C ₅₅ H ₉₂ O ₂₃	1165.5979 (-2.31)[M+HCOO] ⁻	r
90	51.39	G Rd*	C ₄₈ H ₈₂ O ₁₈	991.5455 (-2.29)[M+HCOO] ⁻	r
91	51.66	28-Deglucosylchikusetsusaponin V	C ₄₂ H ₆₆ O ₁₄	793.4360(-1.4)[M-H] ⁻	r
92	52.16	3-Butyl-4-hydroxyphthalide	C ₁₂ H ₁₄ O ₃	207.1010(-2.71)[M+H] ⁺	c
93	52.24	Mal-G Rd/isomer	C ₅₁ H ₈₄ O ₂₁	1031.5408 (-1.83)[M-H] ⁻	r
94	52.59	G Rs2	C ₅₅ H ₉₂ O ₂₃	1165.5979 (-2.40)[M+HCOO] ⁻	r
95	52.59	Aloe-emodin*	C ₁₅ H ₁₀ O ₅	269.0447 (-0.30)[M-H] ⁻	d
96	54.35	Mal-G Rd/isomer	C ₅₁ H ₈₄ O ₂₁	1031.5408 (-1.83)[M-H] ⁻	r
97	55.41	Rhein*	C ₁₅ H ₈ O ₆	283.0239 (-1.28)[M-H] ⁻	d
98	56.60	N Fe	C ₄₇ H ₈₀ O ₁₇	961.5353 (-1.41)[M+HCOO] ⁻	r
99	60.90	Senkyunolide A*	C ₁₂ H ₁₆ O ₂	193.1219 (-5.98)[M+H] ⁺	c
100	61.68	G F2/isomer	C ₄₂ H ₇₂ O ₁₃	829.4950 (-0.60) [M+HCOO] ⁻	r
101	62.78	3-Butylphthalide*	C ₁₂ H ₁₄ O ₂	191.1062 (-5.26)[M+H] ⁺	c
102	64.30	Chikusetsusaponin Iva/isomer	C ₄₂ H ₆₆ O ₁₄	793.4362(-2.14)[M-H] ⁻	r
103	66.86	Cindilide	C ₁₂ H ₁₈ O ₂	195.1378 (-3.61)[M+H] ⁺	c
104	67.08	G Rg3*	C ₄₂ H ₇₂ O ₁₃	829.4938 (-0.72)[M+HCOO] ⁻	r
105	67.12	Unknown triterpenoid	C ₄₂ H ₆₆ O ₁₄	793.4364(-1.99)[M-H] ⁻	c
106	67.76	Butylidenephthalide/isomer	C ₁₂ H ₁₂ O ₂	189.0908 (-3.99)[M+H] ⁺	c
107	68.83	Neocindilide	C ₁₂ H ₁₈ O ₂	195.1377 (-4.12)[M+H] ⁺	c
108	69.06	Emodin*	C ₁₅ H ₁₀ O ₅	269.0448 (-0.20)[M-H] ⁻	d
109	69.31	Ligustilide*	C ₁₂ H ₁₄ O ₂	191.1062 (-5.26)[M+H] ⁺	c
110	70.46	Butylidenephthalide/isomer	C ₁₂ H ₁₂ O ₂	189.0908 (-3.99)[M+H] ⁺	c
111	72.42	28-Desglucosylchikusetsusaponin IVa	C ₃₆ H ₅₆ O ₉	631.3838(-2.16)[M-H] ⁻	r
112	80.82	Chrysophanol	C ₁₅ H ₁₀ O ₄	253.0497 (-1.52)[M-H] ⁻	d
113	81.06	G Rg31/ Rg5/ Rk1/Rz1	C ₄₂ H ₇₀ O ₁₂	811.4858[M+HCOO] ⁻	r
114	82.28	Angelicide	C ₂₄ H ₂₈ O ₄	381.2052 (-3.63)[M+H] ⁺	c
115	83.16	Senkyunolide P/isomer	C ₂₄ H ₃₀ O ₄	383.2207 (-4.00)[M+H] ⁺	c
116	87.10	Senkyunolide P/isomer	C ₂₄ H ₃₀ O ₄	383.2207 (-4.00)[M+H] ⁺	c
117	87.62	Physcion	C ₁₆ H ₁₂ O ₅	283.0606 (-0.14)[M-H] ⁻	d
118	87.74	Riligustilide	C ₂₄ H ₂₈ O ₄	381.2052 (-3.63)[M+H] ⁺	c
119	88.87	Tokinolide B	C ₂₄ H ₂₈ O ₄	381.2053 (-3.37)[M+H] ⁺	c
120	90.81	Levistolide A	C ₂₄ H ₂₈ O ₄	381.2055 (-2.84)[M+H] ⁺	c

Fig. 1. The protective of efficacy-time curve of 5% Naomaitong and single herbs drug-containing serum of different time points on Na₂S₂O₄ damage ($\bar{x}\pm s,n=4$) .

Fig. 2. The protective efficacy-time curve of 5% Naomaitong and single herbs drug-containing serum of different time points on Glu damage ($\bar{x} \pm s, n=4$) .

Fig. 3. The protective efficacy-time curve of 5% Naomaitong and single herbs drug-containing serum of different time points on KCl damage ($\bar{x} \pm s, n=4$) .

Fig. 4. The protective efficacy-time curve of 5% Naomaitong and single herbs drug-containing serum of different time points on H₂O₂ damage ($\bar{x} \pm s, n=4$) .