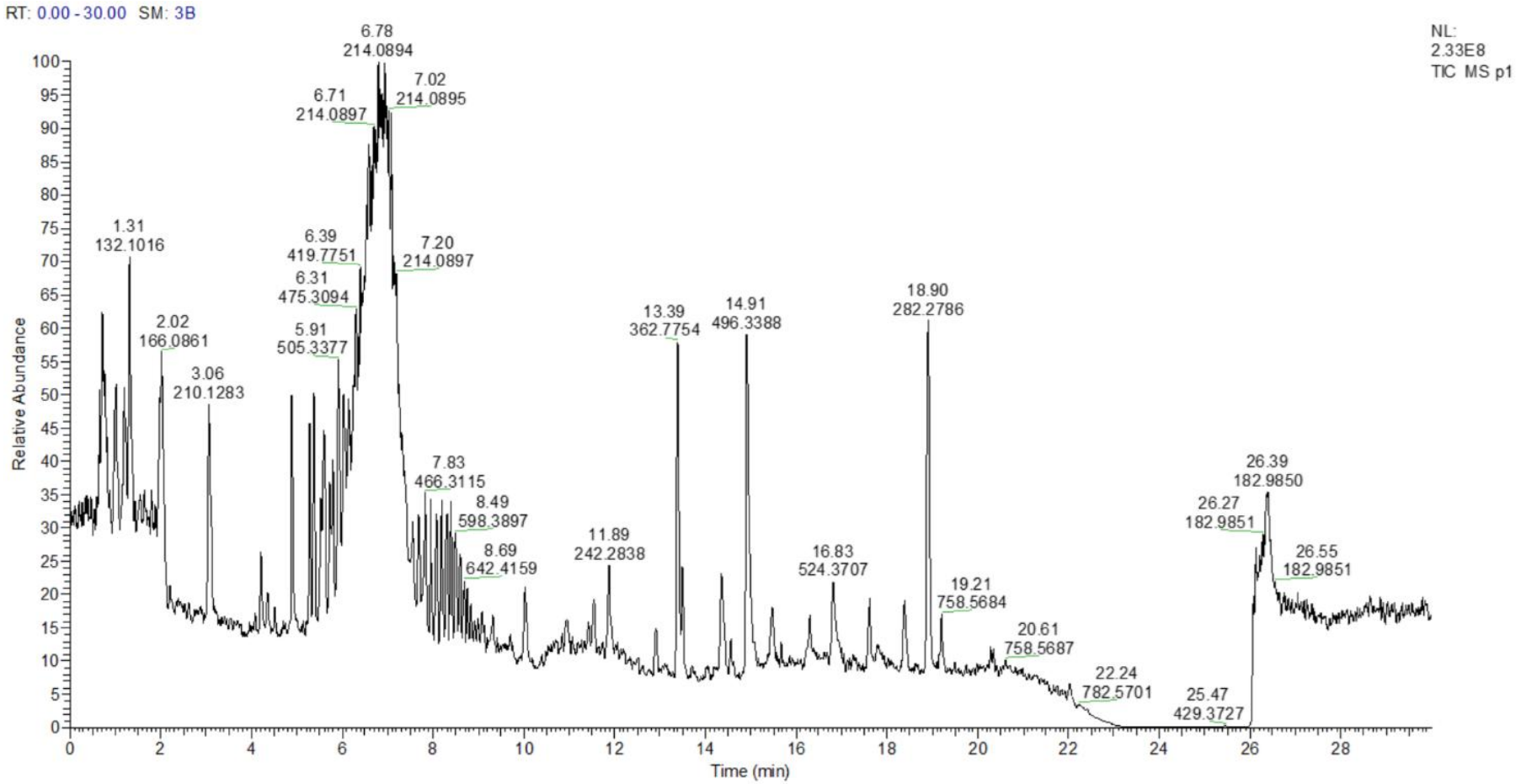
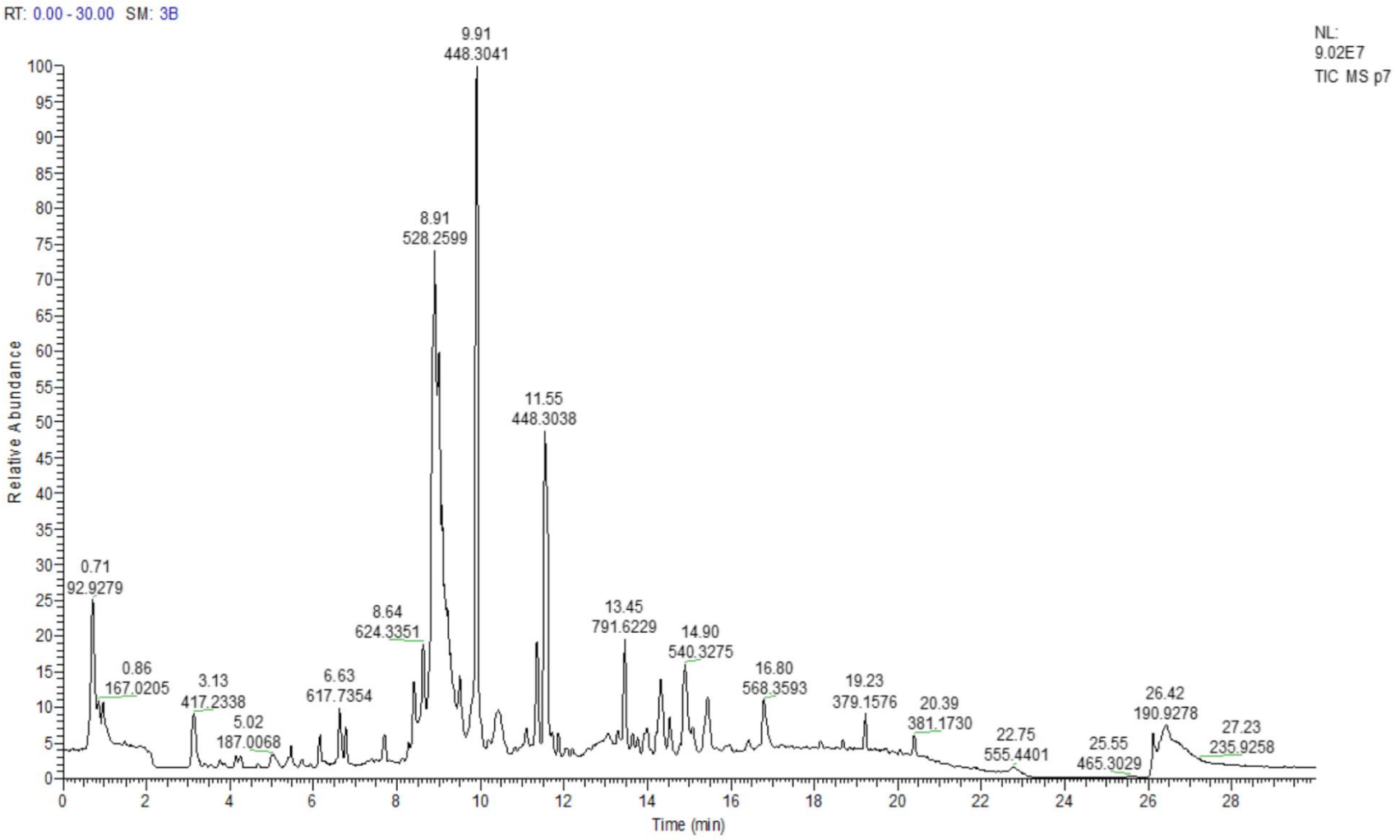


Supplementary Figure 1 Serum total ion flow chromatogram based on IC-MS in positive ion model.



Supplementary Figure 2 Serum total ion flow chromatogram based on IC-MS in negative ion model.

Supplementary Table 1 Changes of the serum bile acid profile between PBC and AIH (mean ± SD)

	PBC	AIH	Control
CA	3644.7 ± 1054.5	4653.8 ± 2361.8	412.3 ± 170.4
GCA	15603.0 ± 3714.4	23304.0 ± 7703.8	170.8 ± 44.9
TCA	2293.4 ± 502.7	3823.0 ± 1189.9	6.8 ± 1.0
UDCA	12955.3 ± 3916.4	8835.8 ± 4766.2	636.3 ± 110.8
GUDCA	73571.8 ± 17342.0	89312.1 ± 24798.1	4781.9 ± 806.8
TUDCA	2253.7 ± 563.3	1859.2 ± 859.0	5.4 ± 1.2
CDCA	12291.2 ± 4028.2	4894.2±1234.4	2781.8±779.8
GCDCA	73571.8 ± 17342.0	89312.1±24798.1	4781.9±806.8
TCDCA	5724.4 ± 1905.4	3905.9±1439.1	2085.0±327.9
GCDCS	2893.9 ± 540.6	3430.1±810.6	73.7±14.3
DCA	3311.3 ± 510.7	3304.5±721.4	2538.5±197.1
GDCA	9916.8 ± 1340.9	14225.6±4466.1	2341.8±334.6
TDCA	11786.0±2367.7	19152.4±4039.1	1661.6±153.3
LCA	308.3±137.0	110.3±33.5	32.4±4.7
TLCA	30.8±14.4	13.2±4.0	1.5±0.3

Bile acid levels between controls and patients were determined by the rank sums Mann-Whitney test.

Supplementary Table 2 Changes of the serum bile acid profile between PBC and AIH in different grade of Child-puph (mean ± SD)

	Control	PBC-A	PBC-B	PBC-C	AIH-A	AIH-B
CA	1.60±0.51	2.33±0.81	2.22±1.01	2.13±1.01	2.27±0.61	2.60±0.81
GCA	1.33±0.50	2.61±0.48	3.12±0.93	3.39±0.56	2.53±0.91	3.91±0.48
TCA	0.20±0.25	1.77±0.45	2.41±0.81	2.53±0.59	1.68±1.11	3.07±0.45
UDCA	2.05±0.36	2.59±1.23	2.46±1.16	2.93±0.90	2.67±0.84	1.91±1.23
GUDCA	1.64±0.50	2.82±1.37	3.03±1.22	3.66±0.92	2.68±1.08	2.41±1.37
TUDCA	0.13±0.25	1.47±1.22	2.02±1.08	2.52±0.87	1.47±1.03	1.49±1.22
CDCA	2.63±0.38	3.04±0.34	3.05±0.61	3.16±0.54	2.97±0.39	2.72±0.34
GCDCA	2.93±0.33	3.53±0.73	3.91±0.78	4.29±0.41	3.50±0.69	4.32±0.73
TCDCA	2.49±0.57	2.77±0.27	2.89±0.58	2.92±0.45	2.80±0.45	2.63±0.27
GCDCS	1.08±0.39	2.20±0.48	2.51±0.80	2.85±0.45	2.00±0.68	3.13±0.48
DCA	2.76±0.18	2.86±0.43	2.61±0.50	2.75±0.28	2.85±0.28	2.59±0.43
GDCA	2.64±0.32	3.15±0.47	3.00±0.65	3.42±0.39	3.04±0.59	3.44±0.47
TDCA	2.57±0.19	2.93±0.49	3.31±0.57	3.51±0.40	3.06±0.55	3.81±0.49
LCA	0.72±0.44	1.24±0.65	1.20±0.51	1.51±0.90	1.00±0.72	0.84±0.65

TLCA	0.02±0.06	0.37±0.51	0.52±0.34	0.70±0.75	0.17±0.28	0.55±0.51
CDCA/CA	1.74±0.42	1.41±0.38	1.63±0.74	1.83±0.92	1.38±0.31	1.14±0.38
primary bile acid	2.67±0.38	3.15±0.52	3.16±0.64	3.23±0.56	3.13±0.42	3.08±0.52
secondary bile acid	2.87±0.17	3.23±0.74	3.04±0.72	3.39±0.48	3.25±0.36	2.97±0.74
secondary/primary	1.09±0.13	1.03±0.24	0.97±0.20	1.07±0.21	1.05±0.14	0.97±0.24
secondary bile acid	2.77±0.18	2.88±0.42	2.63±0.47	2.84±0.33	2.86±0.28	2.61±0.42
glycoconjugates	3.16±0.31	3.93±0.56	4.18±0.75	4.58±0.41	3.87±0.63	4.64±0.56
tauroconjugted	2.89±0.27	3.29±0.41	3.59±0.56	3.76±0.39	3.37±0.49	3.97±0.41
glyco/tauro	0.29±0.27	0.65±0.25	0.60±0.33	0.82±0.12	0.51±0.34	0.67±0.25
total BA	24.80±3.12	35.67±5.84	38.28±8.62	42.29±3.53	34.68±5.57	39.41±5.84

Bile acid levels are expressed in log10 concentrations.Statistically significant differences in BA concentrations between controls and patients were determined by the rank sums Mann-Whitney test.