Table S1. Analytical results of hydrochemistry

Sample ID	Hot Spring	Sampling Time	T ℃	pH	K mg/L	Na mg/L	Ca mg/L	Mg mg/L	Li mg/L	Sr mg/L	Cl mg/L	SO_4 mg/L	HCO_3 mg/L	SiO_2 mg/L	TDS mg/L	Hydrochemical Type
H1	Bei	8/2016	36.7	7.1	16	18.2	500	91.2	0.101	9.792	41.4	1496	150	20.38	2330	SO_4–Ca
W2	Jinyundazhong	8/2016	33.8	7.3	21.1	25.4	537	97.6	0.103	10.29	36.1	1536	157	17.62	2412	SO_4–Ca
W3[a]	Qinmuguan	2009	37	7.5	4.4	6.3	379.3	60.5	—	—	2.7	1005	223.6	22.90	1620	SO_4–Ca
W4	Shangbang	8/2016	42.8	7.1	11.4	10.6	636	130	0.106	10.889	5.1	1974	157	24.77	2926	SO_4–Ca
W5–1[a]	Yishang	2009	40	7.7	17.5	8.1	651.9	120	—	—	4.1	1903.2	157.1	24.60	2833	SO_4–Ca
W5–2	Yishang	8/2016	32.9	7.2	27.8	17.8	634	114	0.103	9.943	18.1	1952	150	15.38	2923	SO_4–Ca
W6–1[a]	Feicuihu	2009	52	7.5	18.7	13.4	600.5	118.4	—	—	2.3	1760.8	166.4	32.10	2665	SO_4–Ca
W6–2	Feicuihu	8/2016	42.6	7.2	24.1	18.9	606	110	0.179	12.049	26.9	1737	159	20.23	2684	SO_4–Ca
W7	Ronghui	8/2016	41.1	7.4	17.3	17.7	443	81.3	0.172	9.308	18.7	1302	157	20.23	2038	SO_4–Ca
H8–1[a]	Tianci	2009	52	7.4	28.3	30.4	633.9	100.3	—	—	5.3	1779.3	164.8	29.20	2720	SO_4–Ca
H8–2	Tianci	8/2016	42.6	7	31.3	35.6	631	116	0.349	12.194	67.7	1846	106	15.69	2834	SO_4–Ca
W9–1[a]	Beidi	2009	51	7.6	22.3	25.2	663.1	115.8	—	—	6.8	1910.2	168.3	30.80	2904	SO_4–Ca
W9–2	Beidi	8/2016	42	7.7	29.9	30	625	116	0.339	10.772	26	1866	145	22.62	2840	SO_4–Ca
W10–1[a]	Taojia	2009	48	7.6	23.4	13.9	641.9	80.4	—	—	4.1	1792.6	195.9	29.30	2715	SO_4–Ca
W10–2	Taojia	8/2016	43.9	7.2	38.9	25.1	586	102	0.361	11.256	6.1	1732	182	34.31	2676	SO_4–Ca
W11	Nanhai	8/2016	47.4	7.6	33.7	39.5	533	101	0.269	11.022	23	1556	166	40.69	2452	SO_4–Ca
H12	Tongjing	10/2013	50.3	8.5	25.4	38.1	511.4	104.7	0.172	7.38	22.6	1630	180.6	33.00	2550	SO_4–Ca
W13[a]	Longmenqiao 2#	2009	52	7.6	8.8	27.8	358.3	71.6	—	—	19.6	1042.9	219.5	27.90	1710	SO_4–Ca
W14–1[a]	Wangjiang	2009	41	7.3	11.7	44.9	585.6	122.9	—	—	43.7	1711.2	195.9	26.20	2686	SO_4–Ca

W14–2	Wangjiang	8/2016	40.1	6.8	12.7	45	611	130	0.175	11.118	53.3	1818	188	42.23	28.60	SO_4–Ca
W15	Haitangxiaoyue	8/2016	52	6.9	14	52.5	626	131	0.171	11.251	45	1901	160	26.23	29.29	SO_4–Ca
W16–1[a]	Dongfang	2009	57	7.6	16.1	44.7	594.1	90.1	—	—	24.6	1716.3	194.4	34.00	26.50	SO_4–Ca
W16–2	Dongfang	8/2016	49.2	6.7	16.9	50.2	508	103	0.156	10.194	52.9	1586	143	14.62	24.64	SO_4–Ca
H17	Nan	8/2016	39.6	7.6	16.1	47.9	454	95.1	0.125	9.019	48.8	1450	183	19.77	23.10	SO_4–Ca
H18	Qiaokouba	8/2016	41.3	6.3	13.2	33.6	530	105	0.118	9.675	20.4	1753	183	34.46	26.41	SO_4–Ca
H19–1[a]	Dongquanredong	2009	51.5	7.7	15.3	21.6	632.3	123.5	—	—	9.6	1876.5	171.1	40.10	28.20	SO_4–Ca
H19–2	Dongquanredong	8/2016	43.5	6.4	30.4	31	597	110	1.22	20.271	9.1	1776	162	29.08	27.20	SO_4–Ca
W20	Xiuquanyinyue	8/2016	49.5	6.2	18.7	25.2	607	113	0.205	10.943	18.3	1771	166	30.46	27.22	SO_4–Ca

a: data from [30]; —: no data

Table S2. Descriptive statistical analyses of hydrochemical parameters (in mg/L except T and pH).

	Minimum	Maximum	Mean	SD	CV
T (℃)	32.9	57	44.74	6.25	0.1396
pH	6.2	8.5	7.27	0.49	0.0671
K	4.4	38.9	20.19	8.20	0.4059
Na	6.3	52.5	28.52	13.22	0.4636
Ca	358.3	663.1	568.44	81.85	0.1440
Mg	60.5	131	105.51	17.66	0.1674
Li	0.101	1.22	0.25	0.26	1.0490
Sr	7.38	20.27	10.96	2.59	0.2362
Cl	2.3	67.7	23.65	18.36	0.7764
SO_4	1005	1974	1685.00	245.70	0.1458
HCO_3	106	223.6	169.70	23.93	0.1410
SiO_2	14.62	42.23	27.10	7.68	0.2834
TDS	1620	2929	2594.07	337.86	0.1302

SD: standard deviation. CV: coefficient of variation.

Table S3. Saturation index of multiple minerals in the hot water samples

Sample ID	Anhydrite	Aragonite	Calcite	Chalcedony	Chrysotile	Dolomite	Gypsum	Halite	Quartz	Sepiolite	Sylvite	Talc
H1	−0.29	0.17	0.3	−0.04	−4.06	0.26	−0.11	−7.79	0.35	−3.41	−7.47	−0.3
W2	−0.29	0.37	0.51	−0.08	−3.21	0.65	−0.08	−7.71	0.33	−2.8	−7.39	0.45
W3	−0.48	0.68	0.82	0	−1.88	1.24	−0.3	−9.42	0.39	−1.89	−9.19	1.97

W4	−0.09	0.32	0.45	−0.02	−2.95	0.61	0.03	−8.96	0.35	−2.84	−8.57	0.92
W5−1	−0.12	0.88	1.01	0	0.27	1.68	0.03	−9.16	0.38	−0.56	−8.46	4.16
W5−2	−0.19	0.27	0.41	−0.12	−3.94	0.44	0.03	−8.17	0.28	−3.33	−7.58	−0.39
W6−1	−0.04	0.83	0.96	−0.01	0.49	1.61	−0.02	−9.2	0.34	−0.82	−8.74	4.49
W6−2	−0.14	0.42	0.55	−0.11	−2.69	0.77	−0.02	−7.98	0.27	−2.81	−7.52	1
W7	−0.32	0.51	0.64	−0.1	−1.9	0.96	−0.19	−8.14	0.28	−2.21	−7.79	1.8
H8−1	−0.02	0.75	0.88	−0.05	−0.42	1.36	0.01	−8.49	0.3	−1.49	−8.2	3.5
H8−2	−0.11	0.05	0.19	−0.22	−4.07	0.04	0.01	−7.31	0.16	−3.91	−7.01	−0.6
W9−1	0	0.94	1.07	−0.02	0.88	1.78	0.04	−8.46	0.34	−0.54	−8.19	4.85
W9−2	−0.12	0.85	0.98	−0.06	0.36	1.63	0.01	−7.79	0.32	−0.67	−7.44	4.15
W10−1	−0.04	0.97	1.1	−0.01	0.09	1.7	0.02	−8.93	0.35	−0.96	−8.37	4.05
W10−2	−0.13	0.48	0.61	0.11	−2.22	0.87	−0.03	−8.5	0.48	−2.17	−7.96	1.93
W11	−0.16	0.84	0.97	0.14	0.71	1.63	−0.09	−7.72	0.5	−0.28	−7.45	4.96
H12	−0.14	1.59	1.72	−0.02	5.88	3.15	−0.09	−7.75	0.34	2.81	−7.6	9.84
W13	−0.34	0.92	1.05	−0.07	0.56	1.81	−0.32	−7.93	0.28	−0.88	−8.1	4.44
W14−1	−0.18	0.57	0.71	0.02	−1.88	1.14	−0.04	−7.39	0.4	−1.99	−7.61	2.06
W14−2	−0.16	0.06	0.19	0.24	−4.5	0.11	−0.01	−7.3	0.62	−3.35	−7.49	−0.14
W15	−0.02	0.24	0.37	−0.09	−3.19	0.45	0.01	−7.32	0.26	−3.41	−7.58	0.65
W16−1	0.01	1.05	1.17	−0.03	1.22	1.9	−0.01	−7.65	0.31	−0.53	−7.8	5.22
W16−2	−0.15	−0.09	0.03	−0.32	−5.39	−0.22	−0.1	−7.26	0.04	−5.17	−7.4	−2.03
H17	−0.31	0.74	0.87	−0.09	−0.74	1.47	−0.16	−7.3	0.29	−1.37	−7.41	2.96
H18	−0.19	−0.49	−0.35	0.14	−7.85	−1.01	−0.06	−7.84	0.52	−5.79	−7.89	−3.67
H19−1	−0.02	1.03	1.16	0.09	1.84	2.01	0.01	−8.38	0.44	0.26	−8.21	6.04
H19−2	−0.13	−0.36	−0.23	0.04	−7.1	−0.79	−0.02	−8.23	0.42	−5.53	−7.89	−3.1
W20	−0.06	−0.47	−0.34	0	−7.65	−1.01	−0.01	−8.03	0.36	−6.15	−7.83	−3.66