Table S1. Compilation of published whole-rock major (in wt.%) and trace element (in ppm) data for mafic dykes in Chinese South Tianshan.

Sample	LOI	Total	Sc	V	Cr	Co	Ni	Rb	Sr	Ba	Y	Nb	Ta	Zr	Hf	Pb	Th	U	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	References
AKS01-1	1.9	100.1	n.a.	166	8.67	n.a.	6.43	40.9	334	2938	43.5	7.85	0.44	233	5.43	n.a.	3.35	0.7	42.5	91.2	12.4	54.2	10.9	3.1	10.5	1.54	8.44	1.69	4.6	0.62	3.99	0.6	43.5	Zhang et al., 2009 [1]
AKS01-2	1.63	99.9	n.a.	174	11	n.a.	6.7	44.2	321	2872	42.8	7.83	0.46	234	5.45	n.a.	3.4	0.69	41.8	90.3	12.2	53.6	10.7	3.13	10.4	1.51	8.43	1.7	4.57	0.63	3.98	0.61	42.8	Zhang et al., 2009 [1]
AKS02-1	2.04	100.2	n.a.	168	11.6	n.a.	6.69	42	409	2923	42.1	7.72	0.44	225	5.25	n.a.	3.24	0.65	39.4	85.8	11.6	51.8	10.4	2.9	10	1.5	8.19	1.6	4.44	0.59	3.84	0.59	42.1	Zhang et al., 2009 [1]
AKS02-2	1.9	99.84	n.a.	155	15.7	n.a.	9.69	37.3	411	3216	42.2	7.81	0.44	228	5.43	n.a.	3.29	0.64	41	86.9	12	53.1	10.5	2.87	10.2	1.48	8.12	1.61	4.4	0.62	3.89	0.59	42.2	Zhang et al., 2009 [1]
AKS02-3	1.66	99.74	n.a.	171	8.21	n.a.	7.08	44.4	425	2703	43.1	7.87	0.44	227	5.25	n.a.	3.23	0.61	40.8	89.2	12.1	53.7	10.7	3.19	10.4	1.52	8.33	1.66	4.5	0.62	3.94	0.59	43.1	Zhang et al., 2009 [1]
AKS05-1	1.66	99.7	n.a.	173	9.42	n.a.	6.59	45.6	402	2661	43.9	7.97	0.45	235	5.48	n.a.	3.39	0.61	42.8	90.9	12.3	54	10.8	3.29	10.4	1.51	8.28	1.68	4.58	0.63	3.94	0.6	43.9	Zhang et al., 2009 [1]
AKS05-2	1.66	99.81	n.a.	246	5.56	n.a.	4.86	29.9	602	3085	43.2	7.14	0.41	207	4.82	n.a.	2.9	0.53	38	85.1	11.9	53.1	10.9	3.05	10.6	1.56	8.31	1.69	4.41	0.62	3.79	0.57	43.2	Zhang et al., 2009 [1]
12T1031	1.38	97.65	n.a.	n.a.	8.84	n.a.	7.66	34.3	559	2715	44.1	8.03	0.52	225	5.97	10.7	3.68	0.74	43.9	92.1	12.9	55.1	11.2	5.29	11.1	1.61	9.3	1.84	4.98	0.65	4.42	0.69	44.1	Cai et al., 2022 [2]
12T1032	1.65	97.86	n.a.	n.a.	10.7	n.a.	9.27	34.8	518	2459	42.9	7.78	0.46	204	5.4	8.17	2.95	0.71	39.1	82.8	12.1	54.4	10.9	5.18	11	1.55	8.74	1.73	4.64	0.6	4.11	0.62	42.9	Cai et al., 2022 [2]
12T1033	1.43	98.05	n.a.	n.a.	10.6	n.a.	9.07	34	542	2816	46.9	8.31	0.49	230	5.81	9.36	3.38	0.65	43.4	89.7	12.8	57.3	11.5	5.33	11.2	1.6	9.23	1.82	4.9	0.64	4.27	0.66	46.9	Cai et al., 2022 [2]
18SK03-2	3.22	99.9	29.7	362	54	34.6	52.2	20.6	494	404	29.9	16.6	1.01	184	4.5	3.9	2.27	0.53	22.4	50.9	6.24	26.5	6.68	2.08	6.39	0.96	5.58	1.1	2.95	0.4	2.41	0.34	29.9	Cai et al., 2022 [2]
A18SK03-3	5.14	100.27	28.6	349	49	40.9	51.5	27.4	515	479	30.7	16.7	1.04	188	4.6	7.9	2.37	0.57	24	54.7	6.66	27.3	7.03	2.05	6.57	1.05	6.12	1.19	3	0.43	2.66	0.42	30.7	Cai et al., 2022 [2]
18SK03-4	4.69	100.12	28.7	347	49	45.8	53.8	18.3	495	321	29.6	16.4	0.99	185	4.3	32.7	2.16	0.42	24.3	53.7	6.59	27.2	6.94	2.15	6.95	0.93	5.55	1.12	2.77	0.39	2.35	0.34	29.6	Cai et al., 2022 [2]
18SK03-5	5.22	100.42	33.1	381	59	38.4	50.4	2.2	51	75.9	37.9	19.1	1.16	197	4.8	7.2	2.43	1.43	20.3	48.4	5.9	25.9	6.59	1.52	6.59	1.1	6.57	1.34	3.45	0.46	2.59	0.37	37.9	Cai et al., 2022 [2]
18SK03-6	5.15	99.89	32.2	427	63	45.4	59.5	1.2	41.6	100	34.5	18.9	1.13	194	4.8	6.5	2.29	1.29	18.4	42.9	5.35	22.2	6.05	1.45	6.36	1.09	6.41	1.21	3.05	0.4	2.32	0.31	34.5	Cai et al., 2022 [2]
18SK04-1	5.32	99.67	30	355	64	45.8	56.2	13.6	379	203	31.2	18.5	1.05	197	4.9	298	2.15	0.52	25.8	59.1	7.1	29.4	6.98	2.19	6.56	1.03	5.89	1.14	3.01	0.42	2.53	0.39	31.2	Cai et al., 2022 [2]
18SK04-3	5.26	100.03	28.1	358	52	41.2	49.8	19.2	470	299	28.4	17.2	0.97	180	4.4	27.4	2.02	0.51	22.7	49.2	6.01	25.2	6.26	2.08	6.27	0.99	5.15	1.04	2.65	0.37	2.23	0.33	28.4	Cai et al., 2022 [2]
18SK04-4	4.09	99.78	24.3	342	33	43.2	48.5	12.2	353	205	30.9	17.4	0.99	192	4.7	66.1	2.39	0.57	22.7	51.3	6.13	27.3	6.96	2.2	6.76	1	5.91	1.22	3.26	0.43	2.63	0.41	30.9	Cai et al., 2022 [2]
19AKS13	4.37	99.79	30.3	389	47	43.7	55.5	23.4	497	345	29.6	17.7	0.93	174	4.5	7.3	2.02	0.46	25.1	51.6	6.02	25	6.31	2.09	6.35	1.01	5.81	1.13	3.01	0.41	2.49	0.37	29.6	Cai et al., 2022 [2]
19AKS14	3.19	99.42	30.7	358	55	45.9	59	13.3	637	1115	26.4	16.5	0.93	166	4.2	3.9	1.93	0.47	21.6	47	5.73	22.8	5.9	1.79	5.79	0.94	5.33	1.05	2.77	0.39	2.32	0.33	26.4	Cai et al., 2022 [2]
19AKS10	4	99.6	30.7	370	45	45.4	60.9	16.9	634	628	28.1	18.3	1.05	177	4.5	5.7	2.24	0.46	23.4	54.1	6.29	25.3	6.37	2.18	6.11	0.98	5.65	1.08	2.84	0.4	2.42	0.38	28.1	Cai et al., 2022 [2]
19AKS11-1	3.78	100.05	27.8	299	57	43.5	64.1	15.3	431	259	26.6	16	0.93	165	4.1	10.6	2.03	0.45	21.7	47.3	5.29	22.8	5.97	1.93	5.62	0.92	5.34	1.05	2.64	0.36	2.24	0.34	26.6	Cai et al., 2022 [2]
19AKS11-2	3.61	100.05	29.6	360	42	44.9	55.2	19.5	482	420	31.9	19.6	1.11	203	5.1	9	2.47	0.55	27.6	57.9	6.38	27.2	6.8	2.11	6.6	1.08	6.26	1.25	3.13	0.43	2.68	0.41	31.9	Cai et al., 2022 [2]
19AKS01-1	4.97	99.48	17.7	219	21	48	75	37.5	364	988	30.2	26.2	1.58	231	5.4	30.2	2.69	0.63	31.3	69.4	8.02	34.4	8.14	2.61	6.99	1.12	6.01	1.21	3.02	0.42	2.49	0.36	30.2	Cai et al., 2022 [2]
19AKS01-4	5.22	99.7	17	218	27	50.5	86.3	33.2	359	914	28.5	25.6	1.44	223	5.3	26.4	2.64	0.59	27.8	64.6	7.98	31.1	7.74	2.52	6.72	1.06	5.88	1.18	2.89	0.39	2.31	0.33	28.5	Cai et al., 2022 [2]
19AKS38	2.66	99.82	38.3	501	31	24.8	35.3	5.5	250	198	49.7	20.2	1.1	230	5.5	1.5	2.26	0.59	25.9	60.9	7.68	34.6	9.29	2.94	9.61	1.52	9.1	1.83	4.94	0.69	4.14	0.61	49.7	Cai et al., 2022 [2]
19AKS39	1.57	100.09	41.4	441	24	45.7	36.8	20.4	233	278	43	14.3	0.86	183	4.7	7.8	2.29	0.47	19.8	45.6	5.57	24.3	6.86	2.26	7.44	1.28	7.74	1.66	4.58	0.65	3.99	0.61	43	Cai et al., 2022 [2]
18SG01	8.57	98.84	18	253	26	42.9	62.4	0.9	92.1	21.1	32	16.9	1.05	190	4.4	7.1	1.78	0.48	20.5	49.2	6.21	27.7	7.31	2.26	7.66	1.13	6.15	1.11	2.79	0.38	2.22	0.32	32	Cai et al., 2022 [2]
19AKS21	8.64	99.66	17.8	247	23	35.7	57.8	4.4	175	154	28.2	16.6	0.95	174	4.1	5.8	1.77	0.5	25.2	55.9	6.38	27.4	6.82	2.08	6.66	0.98	5.66	1.08	2.78	0.36	2.15	0.32	28.2	Cai et al., 2022 [2]
18YM04-1	3.79	99.5	47	400	53.8	33.1	24.1	39.5	158	356	39.8	5.3	0.31	153	3.87	2.5	1.3	0.7	20	46.4	6.35	29.5	6.93	2.59	7.43	1.22	7.21	1.43	4	0.57	3.55	0.54	39.8	Cai et al., 2022 [2]
18YM04-2	4.29	99.34	45.7	395	54.6	33.3	23	37.6	202	397	38.8	5.17	0.3	147	3.72	1.55	1.26	0.59	19.1	44.8	6.28	29.3	7.06	2.73	7.55	1.21	7.45	1.41	4.07	0.56	3.5	0.51	38.8	Cai et al., 2022 [2]
18YM04-3	4.32	99.68	45.3	391	52.5	30.4	21.5	36	151	311	37.6	5.11	0.31	144	3.76	1.72	1.25	0.55	18.8	43.5	6.12	27.9	6.72	2.42	7.17	1.17	7.12	1.34	3.88	0.52	3.43	0.52	37.6	Cai et al., 2022 [2]
18YM06-1	8.27	99.27	49.3	415	72	57.9	51.9	9.63	491	479	38.8	5.61	0.34	146	4.7	72.7	0.74	0.33	16.6	38.1	5.32	25.4	6.39	2.43	7.24	1.18	7.17	1.34	3.9	0.54	3.44	0.5	38.8	Cai et al., 2022 [2]
18YM06-2	5.68	99.57	49.7	423	73.8	71.4	52.9	7.96	376	388	37.6	5.73	0.35	167	4.41	78.3	0.76	0.32	19.4	43.9	5.98	27.6	6.73	2.34	7.34	1.19	7.1	1.31	3.59	0.52	3.2	0.46	37.6	Cai et al., 2022 [2]
18YM06-3	9.54	99.23	50	428	70	54.4	48.5	5.76	457	277	43.2	5.44	0.33	161	4.23	64.4	0.72	0.23	17.8	40.7	5.61	26.6	6.53	2.42	7.56	1.27	7.8	1.5	4.39	0.6	3.74	0.54	43.2	Cai et al., 2022 [2]
18YM07-2	4.09	99.45	49.8	415	76.7	47.2	51.4	6.4	399	326	39.2	5.2	0.32	157	4.21	8.06	0.68	0.18	14.7	35.6	4.98	24.3	6.32	2.35	7.05	1.16	7.33	1.44	3.98	0.58	3.61	0.54	39.2	Cai et al., 2022 [2]
18YM07-3	4.34	99.76	50.7	434	69.7	45.9	46.3	7.21	400	330	39.7	5.28	0.34	162	4.24	7.58	0.74	0.25	15.6	37.9	5.28	25.3	6.69	2.48	7.29	1.2	7.58	1.47	4.23	0.58	3.69	0.55	39.7	Cai et al., 2022 [2]

Sample	LOI	Total	Sc	V	Cr	Co	Ni	Rb	Sr	Ba	Y	Nb	Ta	Zr	Hf	Pb	Th	U	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	References
18YM07-4	3. 39	99. 97	48. 7	414	70. 8	44	45. 3	4. 12	399	350	40. 1	5. 29	0. 33	160	4. 14	6. 99	0. 69	0. 22	15. 4	37. 5	5. 28	25. 4	6. 38	2. 4	7. 07	1. 18	7. 59	1. 43	4. 25	0. 57	3. 62	0. 53	40. 1	Cai et al., 2022 [2]
18YM08-1	6. 22	99. 88	38. 6	294	9. 93	27. 1	9. 26	4. 35	166	127	60. 1	8. 08	0. 46	193	4. 81	211	0. 92	0. 36	32. 3	77. 7	11. 1	54. 2	12. 7	4. 46	13. 1	1. 92	11. 8	2. 16	6. 02	0. 76	4. 87	0. 73	60. 1	Cai et al., 2022 [2]
18YM08-3	6. 76	99. 66	39. 2	287	8. 95	38. 5	9. 71	5. 19	182	238	65. 2	8. 1	0. 49	194	4. 83	104	0. 92	0. 34	36	85. 1	12. 1	59	14. 1	4. 95	14. 2	2. 1	13	2. 37	6. 45	0. 85	5. 11	0. 75	65. 2	Cai et al., 2022 [2]
18YM08-11	6. 24	99. 54	38. 5	277	9. 35	28. 6	12. 5	2. 96	220	417	59. 9	7. 9	0. 45	185	4. 8	415	0. 86	0. 45	32. 7	74. 6	10. 6	51. 5	12. 5	4. 03	12. 6	1. 89	11. 5	2. 22	6. 12	0.8	5. 04	0. 73	59. 9	Cai et al., 2022 [2]
LKXDJ-3-1	7.69	99.8	1026	179	816	42.6	188	44.4	1026	1961	20.8	7.28	0.34	158	3.49	20.0	12.0	1.86	85.8	175	19.3	71.5	10.6	2.75	7.54	0.93	4.20	0.71	1.96	0.26	1.72	0.28	20.8	Deng et al., 2017 [3]
LKXDJ-3-3	7.47	99.8	1027	178	816	41.8	179	43.3	1027	1975	21.0	7.09	0.35	156	3.58	20.4	11.8	1.89	84.5	176	19.5	72.0	10.9	2.75	8.01	0.94	4.23	0.74	2.05	0.27	1.73	0.28	21.0	Deng et al., 2017 [3]
LKXDJ-3-4	7.83	99.8	1031	183	838	42.8	186	43.9	1031	2022	20.5	7.04	0.35	153	3.51	23.2	12.1	1.91	79.1	169	18.9	70.1	10.5	2.66	7.81	0.94	4.17	0.72	1.97	0.27	1.71	0.29	20.5	Deng et al., 2017 [3]
LKXDJ-6-1	3.14	99.8	984	148	507	32.3	137	52.7	984	1678	18.6	8.13	0.41	189	4.47	8.75	7.55	0.86	52.6	111	13.0	48.1	7.63	2.05	5.87	0.74	3.63	0.65	1.75	0.24	1.62	0.27	18.6	Deng et al., 2017 [3]
LKXDJ-6-3	3.67	99.8	954	146	489	31.9	128	47.7	954	1657	18.3	8.66	0.45	195	4.23	8.95	8.29	1.16	55.6	117	13.4	49.4	7.49	2.03	5.81	0.76	3.58	0.63	1.79	0.25	1.63	0.27	18.3	Deng et al., 2017 [3]
LKXDJ-6-4	3.95	99.8	940	147	545	33.9	141	49.2	940	1550	18.5	8.09	0.42	185	4.40	7.96	7.82	1.02	55.1	116	13.3	49.1	7.65	2.04	5.91	0.76	3.63	0.65	1.80	0.26	1.61	0.27	18.5	Deng et al., 2017 [3]
LKXDJ-6-5	4.18	99.8	955	146	466	32.6	130	50.4	955	1727	18.6	8.66	0.45	191	4.50	9.14	8.76	1.21	56.8	119	13.6	50.0	7.78	2.08	5.93	0.76	3.64	0.63	1.80	0.25	1.63	0.27	18.6	Deng et al., 2017 [3]
LKXDJ-7-1	4.91	99.8	962	129	293	25.6	78.8	62.7	962	1487	13.6	6.53	0.37	169	4.01	17.9	6.41	1.50	40.0	82.3	9.30	33.9	5.14	1.51	4.09	0.54	2.69	0.48	1.33	0.19	1.24	0.22	13.6	Deng et al., 2017 [3]
LKXDJ-7-2	4.91	99.8	943	128	287	25.2	78.2	60.3	943	1366	14.5	6.60	0.38	168	4.04	13.7	6.39	1.51	42.3	86.9	9.82	35.5	5.58	1.55	4.34	0.57	2.78	0.52	1.44	0.20	1.32	0.22	14.5	Deng et al., 2017 [3]
LKXDJ-7-3	3.30	99.8	945	124	269	25.3	79.4	61.4	945	1386	14.7	6.95	0.41	172	4.12	13.9	6.84	1.62	40.4	90.1	9.94	36.6	5.51	1.56	4.29	0.58	2.86	0.51	1.45	0.20	1.37	0.23	14.7	Deng et al., 2017 [3]
LKXDJ-9-1	6.18	99.8	743	127	295	27.0	81.0	52.9	743	1726	13.1	6.44	0.39	150	3.65	25.4	7.17	1.78	34.5	74.4	8.72	32.6	5.13	1.46	4.00	0.53	2.55	0.45	1.28	0.18	1.17	0.19	13.1	Deng et al., 2017 [3]
LKXDJ-9-2	6.71	99.8	754	139	325	27.6	88.9	52.4	754	1782	13.0	6.43	0.38	152	3.72	23.6	7.15	1.62	35.3	76.2	8.97	33.3	5.19	1.47	4.09	0.53	2.62	0.47	1.33	0.18	1.18	0.19	13.0	Deng et al., 2017 [3]
LKXDJ-9-3	7.15	99.8	800	129	331	25.8	81.2	57.3	800	1751	13.5	5.79	0.33	158	3.70	31.1	6.55	1.48	36.3	78.2	9.17	34.3	5.44	1.53	4.26	0.56	2.75	0.47	1.34	0.18	1.21	0.20	13.5	Deng et al., 2017 [3]
LKXDJ-10-1	7.68	99.8	1372	187	494	40.6	174	65.1	1372	2648	23.9	10.8	0.54	222	5.09	39.4	16.6	2.93	102	223	25.3	93.9	13.9	3.53	10.1	1.18	5.03	0.84	2.29	0.30	1.93	0.32	23.9	Deng et al., 2017 [3]
LKXDJ-10-2	7.56	99.8	1228	182	470	39.2	176	79.4	1228	2481	23.9	10.0	0.49	218	5.05	34.3	15.6	2.79	101	220	24.8	92.7	13.9	3.46	9.96	1.17	5.13	0.83	2.27	0.30	1.95	0.32	23.9	Deng et al., 2017 [3]
ZYLL-5-1	8.94	99.8	813	173	477	34.4	161	64.7	813	1248	17.4	5.79	0.31	148	3.50	97.7	6.88	1.40	54.7	116	13.5	50.2	7.78	2.12	5.87	0.74	3.55	0.64	1.76	0.24	1.60	0.27	17.4	Deng et al., 2017 [3]
ZYLL-5-2	8.09	99.8	856	169	480	35.9	156	87.1	856	1335	16.8	5.56	0.30	150	3.44	58.5	7.24	1.33	52.1	111	12.9	48.3	7.42	2.08	5.71	0.73	3.46	0.60	1.64	0.24	1.54	0.25	16.8	Deng et al., 2017 [3]
ZYLL-5-3	8.31	99.8	813	172	457	34.3	157	79.0	813	1292	16.9	6.02	0.32	152	3.56	88.0	7.15	1.42	55.1	115	13.1	48.5	7.54	2.09	5.76	0.74	3.44	0.60	1.71	0.24	1.56	0.26	16.9	Deng et al., 2017 [3]
ZYJL-1-1	9.74	99.8	712	168	499	38.4	220	77.8	712	1781	18.8	7.72	0.42	169	4.04	14.3	6.95	1.13	48.8	110	13.0	49.2	7.82	2.17	6.08	0.80	3.77	0.67	1.83	0.26	1.59	0.27	18.8	Deng et al., 2017 [3]
ZYJL-1-2	8.87	99.8	772	170	526	39.7	232	73.8	772	1695	16.0	7.25	0.40	168	3.94	8.62	6.63	1.07	39.8	89.0	10.7	40.7	6.51	1.85	5.07	0.67	3.24	0.57	1.54	0.22	1.37	0.23	16.0	Deng et al., 2017 [3]
LZYD-1-6	6.01	99.8	1206	178	382	35.2	112	68.3	1206	2781	27.4	11.8	0.52	294	6.55	8.79	9.30	1.49	66.9	154	18.9	74.4	13.2	3.74	10.7	1.36	6.00	0.96	2.48	0.31	1.90	0.31	27.4	Deng et al., 2017 [3]
LZYD-1-7	6.45	99.8	1070	166	349	32.2	106	65.7	1070	2859	26.0	10.9	0.49	281	6.33	9.43	8.45	1.31	57.6	138	16.9	67.3	12.1	3.40	9.71	1.26	5.77	0.91	2.28	0.29	1.81	0.29	26.0	Deng et al., 2017 [3]
LZYD-1-8	6.76	99.8	1309	174	386	30.1	116	72.9	1309	3355	25.2	11.3	0.50	285	6.27	7.19	8.49	1.34	57.0	141	17.2	68.8	12.2	3.45	9.67	1.25	5.66	0.88	2.20	0.28	1.79	0.28	25.2	Deng et al., 2017 [3]
LZYD-1-9	5.54	99.8	1228	171	378	32.0	115	84.4	1228	3300	26.3	11.3	0.50	293	6.78	7.40	8.60	1.35	54.8	135	16.9	67.6	12.2	3.46	9.66	1.30	5.73	0.91	2.31	0.30	1.86	0.28	26.3	Deng et al., 2017 [3]
LZYD-1-10	5.20	99.8	1286	177	378	28.7	118	92.7	1286	3389	24.8	11.0	0.49	275	6.41	7.00	8.50	1.37	54.7	132	16.4	65.3	11.7	3.39	9.42	1.22	5.57	0.90	2.23	0.29	1.76	0.29	24.8	Deng et al., 2017 [3]
LZYD-4-1	4.53	99.8	1126	143	196	24.6	75.6	130	1126	3652	18.8	21.5	1.26	273	5.54	13.9	9.91	1.98	49.6	124	14.6	55.8	8.82	2.32	6.66	0.84	3.93	0.68	1.80	0.25	1.56	0.25	18.8	Deng et al., 2017 [3]
LZYD-4-2	3.72	99.8	1167	151	245	28.3	92.6	106	1167	4040	19.6	23.2	1.36	246	5.66	11.7	9.33	1.85	44.9	116	14.4	54.9	8.83	2.39	6.67	0.86	4.07	0.69	1.89	0.25	1.65	0.28	19.6	Deng et al., 2017 [3]
PDCZ-1-1	2.83	99.8	909	173	701	45.4	353	108	909	3409	24.6	11.2	0.54	266	6.57	8.30	6.77	1.11	43.7	128	16.2	68.2	12.7	3.46	9.80	1.26	5.61	0.86	2.13	0.27	1.58	0.23	24.6	Deng et al., 2017 [3]
PDCZ-1-2	2.95	99.8	913	188	678	45.0	336	106	913	3271	24.4	11.4	0.56	273	6.61	5.44	6.86	1.61	46.4	131	16.4	67.8	12.5	3.50	9.64	1.26	5.57	0.85	2.13	0.27	1.61	0.24	24.4	Deng et al., 2017 [3]
PDCZ-2-1	5.01	99.9	849	203	638	45.1	250	97.9	849	2525	20.6	16.1	0.92	191	4.73	7.43	3.87	0.89	32.4	83.8	10.8	44.1	8.22	2.52	6.80	0.96	4.65	0.75	1.87	0.23	1.39	0.21	20.6	Deng et al., 2017 [3]
PDCZ-2-2	4.71	99.8	808	206	657	46.7	256	87.9	808	1841	20.0	16.3	0.95	190	4.66	7.42	3.89	0.90	34.6	84.8	10.7	43.1	8.10	2.42	6.65	0.90	4.47	0.72	1.77	0.24	1.31	0.19	20.0	Deng et al., 2017 [3]
LXHL-1-1	4.89	99.8	1072	151	154	27.1	50.7	74.4	1072	2083	23.9	20.6	1.17	238	5.40	17.5	8.28	1.94	53.4	128	15.6	59.5	9.60	2.51	7.53	0.97	4.76	0.83	2.35	0.34	2.09	0.35	23.9	Deng et al., 2017 [3]
LXHL-1-2	4.89	99.8	1114	148	150	25.3	45.6	73.0	1114	2205	23.8	19.2	1.09	235	5.49	14.9	7.39	1.70	52.9	128	15.8	61.7	9.78	2.61	7.42	0.98	4.78	0.82	2.26	0.32	2.04	0.33	23.8	Deng et al., 2017 [3]
LXHL-1-3	4.89	99.8	1104	151	154	25.8	49.9	73.6	1104	2351	25.1	19.3	1.11	231	5.40	26.1	7.66	1.70	51.8	127	15.6	60.7	9.90	2.62	7.61	1.03	4.99	0.88	2.44	0.34	2.20	0.36	25.1	Deng et al., 2017 [3]
MPYL-1-1	7.07	99.8	1231	165	497	34.0	157	54.3	1231	1740	14.0	5.69	0.32	149	4.06	23.4	4.26	1.14	36.0	76.5	9.09	34.1	5.41	1.51	4.11	0.55	2.79	0.49	1.40	n.a.	1.27	0.22	14.0	Deng et al., 2017 [3]

Sample	LOI	Total	Sc	V	Cr	Co	Ni	Rb	Sr	Ba	Y	Nb	Ta	Zr	Hf	Pb	Th	U	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	References
MPYL-1-2	7.08	99.8	1340	161	441	30.9	127	60.1	1340	1682	14.1	5.75	0.31	155	4.04	20.5	4.54	1.15	38.1	80.0	9.26	34.5	5.45	1.53	4.20	0.56	2.79	0.50	1.42	n.a.	1.29	0.21	14.1	Deng et al., 2017 [3]
MPYL-1-3	7.29	99.8	1264	160	442	32.7	139	57.3	1264	1722	13.5	5.86	0.34	152	3.68	20.8	4.63	1.19	35.6	74.9	8.84	32.7	5.14	1.47	4.00	0.54	2.71	0.48	1.36	n.a.	1.23	0.20	13.5	Deng et al., 2017 [3]
MPYL-2-1	7.67	99.8	781	158	393	29.1	112	50.9	781	1400	13.5	5.03	0.30	139	3.38	15.9	4.88	1.23	33.2	68.4	7.91	29.2	4.77	1.32	3.80	0.52	2.69	0.48	1.36	n.a.	1.31	0.22	13.5	Deng et al., 2017 [3]
MPYL-2-2	7.56	99.8	708	149	421	28.9	114	50.9	708	1504	13.5	4.93	0.29	135	3.33	16.4	4.62	1.16	32.1	67.5	7.79	29.4	4.72	1.34	3.79	0.52	2.70	0.48	1.35	n.a.	1.27	0.21	13.5	Deng et al., 2017 [3]
MPYL-2-3	7.31	99.9	831	152	352	28.0	96.3	60.0	831	1637	13.9	5.51	0.32	144	3.26	19.8	5.42	1.40	32.2	68.8	8.03	30.0	4.80	1.39	3.89	0.54	2.70	0.50	1.42	n.a.	1.30	0.22	13.9	Deng et al., 2017 [3]
MPWGZ-1-1	6.87	99.8	1433	169	584	42.3	249	52.7	1433	1347	17.6	5.51	0.31	144	3.51	15.4	3.82	0.74	30.4	64.9	7.81	30.0	5.10	1.48	4.29	0.63	3.32	0.63	1.72	n.a.	1.66	0.27	17.6	Deng et al., 2017 [3]
MPWGZ-1-3	5.53	99.8	1925	168	557	37.9	227	60.4	1925	1449	17.3	5.51	0.31	156	3.89	14.3	3.72	0.72	30.5	64.5	7.68	29.6	5.01	1.55	4.20	0.62	3.27	0.61	1.72	n.a.	1.68	0.27	17.3	Deng et al., 2017 [3]
MPWGZ-1-5	6.34	99.8	1446	171	557	40.8	238	54.8	1446	1542	16.9	5.70	0.32	146	3.67	14.2	3.85	0.79	29.6	62.5	7.49	28.2	4.89	1.45	4.07	0.60	3.24	0.60	1.71	n.a.	1.60	0.26	16.9	Deng et al., 2017 [3]
LYGC-2-1	3.99	99.8	898	166	417	40.0	215	54.3	898	2324	21.1	8.41	0.42	179	4.33	13.7	8.54	1.73	53.2	124	14.9	56.8	9.08	2.49	6.81	0.87	4.16	0.72	2.05	n.a.	1.88	0.30	21.1	Deng et al., 2017 [3]
LYGC-2-3	5.51	99.8	763	161	391	35.6	189	52.2	763	2644	19.1	8.30	0.41	176	3.93	17.3	8.13	1.68	46.8	120	13.9	53.5	8.44	2.24	6.41	0.82	3.86	0.67	1.84	n.a.	1.70	0.29	19.1	Deng et al., 2017 [3]
LYGC-2-4	5.18	99.8	820	171	397	36.5	186	58.3	820	2862	19.8	8.35	0.42	176	4.26	19.4	8.44	1.68	48.9	124	14.5	55.7	8.64	2.44	6.62	0.86	3.98	0.68	1.96	0.27	1.76	0.30	19.8	Deng et al., 2017 [3]
RSXC-2-1	5.84	99.8	1925	163	369	34.5	147	58.6	1925	1577	16.7	8.42	0.48	176	4.59	12.1	3.00	0.65	32.2	70.6	8.67	33.8	5.77	1.78	4.68	0.67	3.40	0.59	1.62	0.23	1.45	0.23	16.7	Deng et al., 2017 [3]
RSXC-2-2	6.00	99.9	890	153	221	28.5	96.3	74.3	890	1763	14.9	9.02	0.50	183	4.71	9.25	3.13	0.76	30.7	70.9	8.71	33.6	5.57	1.82	4.56	0.63	3.06	0.52	1.41	0.20	1.25	0.20	14.9	Deng et al., 2017 [3]
RSXC-2-5	5.97	99.8	943	161	370	32.1	137	56.4	943	1728	16.5	8.08	0.44	166	4.35	14.0	2.70	0.59	29.7	68.4	8.38	33.1	5.77	1.78	4.70	0.66	3.37	0.60	1.60	0.22	1.37	0.24	16.5	Deng et al., 2017 [3]
RSXC-3-1	6.36	99.8	806	154	353	32.7	150	65.3	806	2018	16.5	9.87	0.55	186	4.67	8.10	3.59	0.85	33.8	80.3	9.78	37.9	6.29	1.92	4.95	0.67	3.31	0.57	1.62	0.23	1.45	0.22	16.5	Deng et al., 2017 [3]
RSXC-3-2	6.54	99.8	809	153	375	31.4	135	65.0	809	2101	16.8	9.78	0.54	185	4.61	6.87	3.63	0.86	34.1	80.9	9.92	38.4	6.46	1.97	5.10	0.67	3.40	0.59	1.64	0.23	1.41	0.23	16.8	Deng et al., 2017 [3]
RSXC-3-4	5.91	99.8	1541	156	271	31.8	117	70.4	1541	1888	15.6	10.0	0.55	192	4.75	8.01	3.46	0.83	36.0	78.7	9.36	36.0	5.83	1.82	4.80	0.65	3.19	0.56	1.51	0.21	1.34	0.23	15.6	Deng et al., 2017 [3]
WDSC-1-1	6.79	99.8	1337	157	287	32.8	135	50.4	1337	2017	18.7	9.85	0.49	187	4.29	26.4	6.23	1.47	50.5	113	13.2	50.1	7.91	2.17	6.12	0.79	3.86	0.65	1.82	0.26	1.70	0.28	18.7	Deng et al., 2017 [3]
WDSC-1-2	6.18	99.8	1471	154	304	30.4	125	54.8	1471	1939	19.3	8.94	0.46	196	4.43	23.7	5.71	1.33	52.1	115	13.6	51.1	8.11	2.32	6.24	0.82	3.87	0.67	1.87	0.26	1.72	0.29	19.3	Deng et al., 2017 [3]
WDSC-1-5	5.93	99.8	1299	152	315	33.1	141	55.0	1299	1786	18.9	9.44	0.49	192	4.49	36.3	6.02	1.37	49.5	109	12.8	48.3	7.83	2.30	5.90	0.78	3.79	0.66	1.85	0.26	1.70	0.28	18.9	Deng et al., 2017 [3]
WDSC-2-1	5.29	99.8	998	154	241	31.0	123	79.3	998	2736	19.7	10.8	0.57	189	4.05	24.3	7.98	1.88	42.4	114	13.0	49.9	7.95	2.22	6.02	0.79	3.77	0.66	1.84	0.26	1.67	0.28	19.7	Deng et al., 2017 [3]
WDSC-2-2	0.59	99.8	1003	150	280	30.9	124	89.1	1003	n.a.	20.7	10.5	0.54	192	4.33	22.9	8.16	1.82	44.8	110	13.5	52.0	8.44	2.33	6.24	0.82	3.98	0.71	1.98	0.29	1.89	0.32	20.7	Deng et al., 2017 [3]
WDSC-2-3	0.56	99.8	977	145	269	31.5	128	94.2	977	n.a.	20.9	10.7	0.56	191	4.32	37.2	8.19	1.89	36.7	119	12.5	50.3	8.37	2.29	6.27	0.83	4.08	0.72	2.02	0.29	1.94	0.33	20.9	Deng et al., 2017 [3]
WDSC-3-1	0.44	99.8	4054	161	280	30.0	66.1	55.0	4054	n.a.	18.4	8.99	0.48	228	5.02	20.4	8.96	2.61	48.5	103	12.4	48.8	8.69	2.44	6.58	0.84	3.92	0.63	1.72	0.23	1.53	0.26	18.4	Deng et al., 2017 [3]
WDSC-3-3	0.44	99.8	5114	160	274	29.4	63.7	64.9	5114	n.a.	17.4	8.93	0.47	240	5.71	35.5	8.69	2.44	44.6	97.1	11.7	46.6	8.26	2.31	6.26	0.79	3.72	0.59	1.65	0.22	1.39	0.24	17.4	Deng et al., 2017 [3]
WDSC-3-4	0.44	99.8	2184	157	261	28.8	60.5	53.3	2184	n.a.	18.7	8.79	0.48	212	4.98	25.6	8.90	2.43	46.9	103	12.4	49.0	8.71	2.43	6.74	0.85	3.94	0.64	1.74	0.24	1.53	0.26	18.7	Deng et al., 2017 [3]
LYGC-1-1	6.04	99.8	727	144	295	28.9	110	44.1	727	1814	17.9	9.31	0.49	167	3.95	23.5	7.74	1.54	56.0	124	14.1	51.7	7.84	2.16	6.01	0.75	3.51	0.61	1.74	n.a.	1.54	0.26	17.9	Deng et al., 2017 [3]
LYGC-1-2	4.97	99.8	1177	154	301	28.6	112	55.2	1177	2113	18.1	9.51	0.50	182	4.22	11.7	7.89	1.59	56.7	124	14.2	52.3	8.12	2.15	5.98	0.75	3.59	0.64	1.77	n.a.	1.65	0.28	18.1	Deng et al., 2017 [3]
LYGC-1-5	5.55	99.8	884	151	302	29.0	115	57.9	884	1775	18.2	9.48	0.51	189	4.54	9.23	7.87	1.57	57.9	131	14.9	55.0	8.28	2.31	6.19	0.78	3.67	0.64	1.77	n.a.	1.59	0.26	18.2	Deng et al., 2017 [3]
RSXC-1-1	6.59	99.8	1176	161	22.8	27.6	12.4	63.8	1176	2537	20.8	9.41	0.49	208	4.42	21.7	5.68	1.15	55.1	128	15.5	59.3	9.44	2.65	7.06	0.91	4.33	0.74	2.04	0.27	1.81	0.29	20.8	Deng et al., 2017 [3]
RSXC-1-2	4.33	99.8	1415	166	16.0	28.2	12.0	49.4	1415	2591	22.8	9.57	0.48	207	4.51	14.2	5.88	1.19	55.3	127	15.4	58.3	9.23	2.66	7.05	0.92	4.51	0.79	2.24	0.32	2.03	0.34	22.8	Deng et al., 2017 [3]
RSXC-1-4	6.49	99.8	1286	174	23.8	30.7	13.6	57.3	1286	2411	17.9	8.72	0.45	187	4.11	13.7	5.44	1.05	50.5	116	14.1	53.8	8.44	2.48	6.43	0.81	3.72	0.63	1.67	0.22	1.45	0.23	17.9	Deng et al., 2017 [3]
ZYLL-2-1	7.83	99.8	696	156	530	36.7	167	31.1	696	1394	14.4	7.13	0.36	135	3.18	14.8	6.18	1.27	35.5	73.4	8.48	31.3	5.04	1.46	4.12	0.55	2.85	0.51	1.43	0.20	1.32	0.22	14.4	Deng et al., 2017 [3]
ZYLL-2-2	8.26	99.8	713	156	513	34.3	151	31.5	713	1341	13.9	6.71	0.35	139	3.45	22.5	5.61	1.26	35.8	74.0	8.62	31.6	5.01	1.48	4.04	0.56	2.73	0.48	1.35	0.19	1.26	0.21	13.9	Deng et al., 2017 [3]
ZYLL-2-3	8.17	99.8	681	159	533	34.1	154	28.9	681	1302	14.3	6.66	0.34	132	3.27	17.3	5.36	1.29	37.2	75.5	8.77	32.0	5.11	1.50	4.14	0.57	2.88	0.51	1.40	0.19	1.30	0.21	14.3	Deng et al., 2017 [3]
ZYLL-7-1	5.14	99.8	1024	173	548	39.5	223	72.9	1024	1781	17.6	7.12	0.39	173	4.10	18.2	8.43	1.60	53.6	116	13.7	51.0	8.11	2.09	6.08	0.76	3.62	0.63	1.73	0.24	1.50	0.26	17.6	Deng et al., 2017 [3]
ZYLL-7-2	5.44	99.8	1038	178	568	38.9	222	66.7	1038	1648	17.4	7.02	0.37	172	4.12	23.2	8.56	1.61	53.1	115	13.4	49.8	7.83	2.14	5.76	0.74	3.45	0.62	1.73	0.24	1.50	0.26	17.4	Deng et al., 2017 [3]
ZYLL-7-3	5.38	99.76	1045	183.5	557.9	38.04	210.1	74.2	1045	1789	18.45	7.12	0.36	174	4.11	18.54	8.48	1.62	56.93	123	14.29	52.97	8.36	2.16	6.28	0.79	3.78	0.65	1.82	0.25	1.63	0.27	18.45	Deng et al., 2017 [3]

n.a. represents no analyzed data.

Table S2. Compilation of PGE, Cu, Ni, and S concentrations in ore and ore-related rocks from porphyry Cu–Au deposits and lode gold provinces worldwide.

Sample no.	Specific locality	Lithology	Sample type	Ir (ng/g)	Ru (ng/g)	Rh (ng/g)	Pt （ng/g)	Pd (ng/g)	Au (ng/g)	ΣPGE (ng/g)	Ru/Ir	Ru/Pt	Pd/Ir	Pd/Pt	Reference
Ore of orogenic gold deposit (8)															
1/2/4000	Danba gold deposit	pyrrhotite	whole rock	0.061	0.281	0.282	0.148	1.124	n.a.	1.895	4.6	1.9	18.6	7.6	Wang et al., 2020 [4]
3970-16-1	Danba gold deposit	pyrrhotite	whole rock	0.022	0.338	0.192	0.182	0.95	n.a.	1.684	15.7	1.8	44.2	5.2	Wang et al., 2020 [4]
12/3/4155	Danba gold deposit	pyrrhotite	whole rock	0.112	0.41	0.165	0.1	0.718	n.a.	1.505	3.7	4.1	6.4	7.2	Wang et al., 2020 [4]
6/1/4035	Danba gold deposit	pyrrhotite	whole rock	0.035	0.287	0.348	0.073	0.868	n.a.	1.61	8.2	4	24.9	12	Wang et al., 2020 [4]
3880-15-4	Danba gold deposit	pyrrhotite	whole rock	0.044	0.446	0.286	0.127	0.34	n.a.	1.243	10.2	3.5	7.8	2.7	Wang et al., 2020 [4]
4/1/4035	Danba gold deposit	pyrrhotite	whole rock	0.03	0.329	0.32	0.041	0.475	n.a.	1.196	10.8	7.9	15.6	11.5	Wang et al., 2020 [4]
12/2/4035	Danba gold deposit	pyrrhotite	whole rock	0.071	0.309	0.156	0.041	0.578	n.a.	1.155	4.4	7.5	8.2	14.1	Wang et al., 2020 [4]
3780-15-2	Danba gold deposit	pyrrhotite	whole rock	0.037	0.212	0.268	0.181	0.257	n.a.	0.955	5.7	1.2	6.9	1.4	Wang et al., 2020 [4]
GC92-1500	Galore Creek Cu–Au deposit	heavy mineral	whole rock	0.1	5	0.1	17	407	n.a.	429.2	50.00	0.29	4070	23.94	Thompson et al., 2001 [5]
GC92-1523	Galore Creek Cu–Au deposit	heavy mineral	whole rock	0.1	9	0.5	54	1039	n.a.	1102.6	90.00	0.17	10390	19.24	Thompson et al., 2001 [5]
GC92-1541	Galore Creek Cu–Au deposit	heavy mineral	whole rock	0.1	0.1	0.1	15	103	n.a.	118.3	1.00	0.01	1030	6.87	Thompson et al., 2001 [5]
GC92-1541	Galore Creek Cu–Au deposit	heavy mineral	whole rock	0.2	5	0.5	107	1581	n.a.	1693.7	25.00	0.05	7905	14.78	Thompson et al., 2001 [5]
MBX	Mt. Milligan Cu–Au deposit	heavy mineral	whole rock	0.2	0.1	0.7	28	112	n.a.	141.0	0.50	0.00	560	4.00	Thompson et al., 2001 [5]
66Z	Mt. Milligan Cu–Au deposit	heavy mineral	whole rock	0.1	8	0.3	17	51	n.a.	76.4	80.00	0.47	510	3.00	Thompson et al., 2001 [5]
WBX	Mt. Milligan Cu–Au deposit	heavy mineral	whole rock	1.3	32	2.2	23	124	n.a.	182.5	24.62	1.39	95.38	5.39	Thompson et al., 2001 [5]
SST	Mt. Milligan Cu–Au deposit	heavy mineral	whole rock	0.3	33	0.9	62	588	n.a.	684.2	110.00	0.53	1960	9.48	Thompson et al., 2001 [5]
MMSS-1	Mt. Milligan Cu–Au deposit	heavy mineral	whole rock	0.6	7	2.1	111	6312	n.a.	6432.7	11.67	0.06	10520	56.86	Thompson et al., 2001 [5]
Felsic intrusions associated with porphyry Cu–Au mineralization (72)															
TWG901	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.012	0.023	0.018	1.22	1.01	1	2.28	1.92	0.02	84.17	0.83	Gao et al., 2015 [6]
TWG902	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.011	0.021	0.022	0.44	0.44	16	0.93	1.91	0.05	40.00	1.00	Gao et al., 2015 [6]
TWG903	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.01	0.036	0.067	0.51	0.77	1	1.39	3.60	0.07	77.00	1.51	Gao et al., 2015 [6]
TWG904	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.009	0.023	0.023	0.55	0.75	22	1.36	2.56	0.04	83.33	1.36	Gao et al., 2015 [6]
TWG905	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.008	0.027	0.041	0.33	0.96	6	1.37	3.38	0.08	120.00	2.91	Gao et al., 2015 [6]
TWG907	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.011	0.02	0.027	0.58	0.65	13	1.29	1.82	0.03	59.09	1.12	Gao et al., 2015 [6]
TWG908	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.011	0.034	0.049	0.49	0.74	3	1.32	3.09	0.07	67.27	1.51	Gao et al., 2015 [6]
TWG909	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.012	0.026	0.016	0.44	0.85	3	1.34	2.17	0.06	70.83	1.93	Gao et al., 2015 [6]
TWG910	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.01	0.024	0.017	0.56	1	6	1.61	2.40	0.04	100.00	1.79	Gao et al., 2015 [6]
TWG911	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.014	0.014	0.054	0.76	0.9	8	1.74	1.00	0.02	64.29	1.18	Gao et al., 2015 [6]
TWG912	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.011	0.029	0.033	0.82	1.07	15	1.96	2.64	0.04	97.27	1.30	Gao et al., 2015 [6]
TWG913	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.014	0.026	0.033	0.97	0.81	13	1.85	1.86	0.03	57.86	0.84	Gao et al., 2015 [6]
TWG914	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.01	0.033	0.012	0.59	0.75	2	1.40	3.30	0.06	75.00	1.27	Gao et al., 2015 [6]
TWG915	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.008	0.031	0.01	0.53	0.79	2	1.37	3.88	0.06	98.75	1.49	Gao et al., 2015 [6]
TWG916	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.008	0.023	0.029	0.91	1.11	7	2.08	2.88	0.03	138.75	1.22	Gao et al., 2015 [6]
XTWG15	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.022	0.026	0.045	0.045	1.24	83	1.38	1.18	0.58	56.36	27.56	Gao et al., 2015 [6]
XTWG15	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.023	0.053	0.053	0.46	0.46	57	1.05	2.30	0.12	20.00	1.00	Gao et al., 2015 [6]
XTWG22	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.022	0.034	0.058	0.45	1.14	72	1.70	1.55	0.08	51.82	2.53	Gao et al., 2015 [6]
XTWG24	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.058	0.03	0.167	0.71	1.01	310	1.98	0.52	0.04	17.41	1.42	Gao et al., 2015 [6]
XTWG27	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.022	0.018	0.067	0.33	1.07	200	1.51	0.82	0.05	48.64	3.24	Gao et al., 2015 [6]
XTWG30	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.017	0.026	0.05	0.42	0.71	226	1.22	1.53	0.06	41.76	1.69	Gao et al., 2015 [6]
XTWG34	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.025	0.039	0.016	0.38	0.67	87	1.13	1.56	0.10	26.80	1.76	Gao et al., 2015 [6]
XTWG36	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.032	0.03	0.051	0.53	1.17	162	1.81	0.94	0.06	36.56	2.21	Gao et al., 2015 [6]

XTWG43	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.011	0.026	0.038	0.49	1.17	162	1.74	2.36	0.05	106.36	2.39	Gao et al., 2015 [6]
XTWG44	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.009	0.075	0.029	0.39	1.08	290	1.58	8.33	0.19	120.00	2.77	Gao et al., 2015 [6]
XTWG45	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.012	0.04	0.029	0.73	1.11	323	1.92	3.33	0.05	92.50	1.52	Gao et al., 2015 [6]
XTWG50	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.011	0.027	0.035	0.29	0.67	321	1.03	2.45	0.09	60.91	2.31	Gao et al., 2015 [6]
XTWG66	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.013	0.028	0.077	0.28	1.19	18	1.59	2.15	0.10	91.54	4.25	Gao et al., 2015 [6]
XTWG68	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.011	0.023	0.013	0.2	0.5	16	0.75	2.09	0.12	45.45	2.50	Gao et al., 2015 [6]
XTWG18	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.02	0.067	0.093	0.22	21.5	10	21.90	3.35	0.30	1075.00	97.73	Gao et al., 2015 [6]
XTWG84	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.046	0.08	0.037	0.63	0.65	68	1.44	1.74	0.13	14.13	1.03	Gao et al., 2015 [6]
XTWG88	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.019	0.051	0.027	0.88	1.16	31	2.14	2.68	0.06	61.05	1.32	Gao et al., 2015 [6]
XTWG92	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.031	0.067	0.021	0.57	0.76	44	1.45	2.16	0.12	24.52	1.33	Gao et al., 2015 [6]
XTWG94	Tuwu Cu–Au deposit	diorite porphyry	whole rock	0.04	0.061	0.029	1.12	1.26	29	2.51	1.53	0.05	31.50	1.13	Gao et al., 2015 [6]
XTWG19	Tuwu Cu–Au deposit	plagiogranite porphyry	whole rock	0.02	0.109	0.023	0.49	1.38	73	2.02	5.45	0.22	69.00	2.82	Gao et al., 2015 [6]
XTWG40	Tuwu Cu–Au deposit	plagiogranite porphyry	whole rock	0.012	0.023	0.069	0.006	0.51	136	0.62	1.92	3.83	42.50	85.00	Gao et al., 2015 [6]
XTWG53	Tuwu Cu–Au deposit	plagiogranite porphyry	whole rock	0.007	0.054	0.024	1.49	2.35	1590	3.93	7.71	0.04	335.71	1.58	Gao et al., 2015 [6]
XTWG55	Tuwu Cu–Au deposit	plagiogranite porphyry	whole rock	0.009	0.057	0.016	0.3	1.2	120	1.58	6.33	0.19	133.33	4.00	Gao et al., 2015 [6]
Mafic dlikes associated with Au mineralization (72)															
YLW-1	Zhenyuan gold deposit	lamprophyres	whole rock	0.062	0.056	0.13	2.24	1.91	n.a.	4.40	0.90	0.03	30.81	0.85	Gan and Hang et al., 2017 [7]
YLW-2	Zhenyuan gold deposit	lamprophyres	whole rock	0.063	0.031	0.11	1.53	1.57	n.a.	3.30	0.49	0.02	24.92	1.03	Gan and Hang et al., 2017 [7]
YLW-3	Zhenyuan gold deposit	lamprophyres	whole rock	0.055	0.05	0.02	0.29	0.32	n.a.	0.74	0.91	0.17	5.82	1.10	Gan and Hang et al., 2017 [7]
YLW-3	Zhenyuan gold deposit	lamprophyres	whole rock	0.080	0.092	0.018	0.294	0.378	n.a.	0.86	1.15	0.31	4.74	1.29	Gan and Hang et al., 2017 [7]
YLW-8	Zhenyuan gold deposit	lamprophyres	whole rock	0.051	0.02	0.12	2.82	2.99	n.a.	6.00	0.39	0.01	58.63	1.06	Gan and Hang et al., 2017 [7]
YLW-9	Zhenyuan gold deposit	lamprophyres	whole rock	0.11	0.054	0.18	1.62	1.76	n.a.	3.72	0.49	0.03	16.00	1.09	Gan and Hang et al., 2017 [7]
YLW-10	Zhenyuan gold deposit	lamprophyres	whole rock	0.049	0.087	0.017	1.18	0.51	n.a.	1.84	1.78	0.07	10.41	0.43	Gan and Hang et al., 2017 [7]
YLW-11	Zhenyuan gold deposit	lamprophyres	whole rock	0.096	0.18	0.041	0.64	0.67	n.a.	1.63	1.88	0.28	6.98	1.05	Gan and Hang et al., 2017 [7]
YLW-12	Zhenyuan gold deposit	lamprophyres	whole rock	0.067	0.027	0.087	1.73	3.06	n.a.	4.97	0.40	0.02	45.67	1.77	Gan and Hang et al., 2017 [7]
YLW-13	Zhenyuan gold deposit	lamprophyres	whole rock	0.033	0.004	0.054	3.1	2.77	n.a.	5.96	0.12	0.00	83.94	0.89	Gan and Hang et al., 2017 [7]
YD-1	Zhenyuan gold deposit	lamprophyres	whole rock	0.12	0.048	0.12	2.75	1.96	n.a.	5.00	0.40	0.02	16.33	0.71	Gan and Hang et al., 2017 [7]
YD-2	Zhenyuan gold deposit	lamprophyres	whole rock	0.16	0.036	0.098	2.39	2.07	n.a.	4.75	0.23	0.02	12.94	0.87	Gan and Hang et al., 2017 [7]
YD-3	Zhenyuan gold deposit	lamprophyres	whole rock	0.077	0.006	0.14	2.48	2.79	n.a.	5.49	0.08	0.00	36.23	1.13	Gan and Hang et al., 2017 [7]
YD-4	Zhenyuan gold deposit	lamprophyres	whole rock	0.023	0.047	0.02	0.78	0.55	n.a.	1.42	2.04	0.06	23.91	0.71	Gan and Hang et al., 2017 [7]
YD-5	Zhenyuan gold deposit	lamprophyres	whole rock	0.026	0.016	0.025	0.73	0.6	n.a.	1.40	0.62	0.02	23.08	0.82	Gan and Hang et al., 2017 [7]
YD-7	Zhenyuan gold deposit	lamprophyres	whole rock	0.137	0.032	0.096	2.47	2.55	n.a.	5.29	0.23	0.01	18.61	1.03	Gan and Hang et al., 2017 [7]

YD-7	Zhenyuan gold deposit	lamprophyres	whole rock	0.12	0.03	0.10	2.90	2.57	n.a.	5.72	0.24	0.01	21.21	0.89	Gan and Hang et al., 2017 [7]
YD-8	Zhenyuan gold deposit	lamprophyres	whole rock	0.2	0.048	0.11	2.37	2.51	n.a.	5.24	0.24	0.02	12.55	1.06	Gan and Hang et al., 2017 [7]
YD-9	Zhenyuan gold deposit	lamprophyres	whole rock	0.11	0.029	0.1	2.45	2.34	n.a.	5.03	0.26	0.01	21.27	0.96	Gan and Hang et al., 2017 [7]
YD-10	Zhenyuan gold deposit	lamprophyres	whole rock	0.1	0.009	0.093	2.06	2.17	n.a.	4.43	0.09	0.00	21.70	1.05	Gan and Hang et al., 2017 [7]
YD-11	Zhenyuan gold deposit	lamprophyres	whole rock	0.036	0.012	0.074	1.19	1.44	n.a.	2.75	0.33	0.01	40.00	1.21	Gan and Hang et al., 2017 [7]
YD-12	Zhenyuan gold deposit	lamprophyres	whole rock	0.043	0.035	0.1	1.42	2.85	n.a.	4.45	0.81	0.02	66.28	2.01	Gan and Hang et al., 2017 [7]
YD-13	Zhenyuan gold deposit	lamprophyres	whole rock	0.075	0.044	0.15	3.01	3.77	n.a.	7.05	0.59	0.01	50.27	1.25	Gan and Hang et al., 2017 [7]
YD-13	Zhenyuan gold deposit	lamprophyres	whole rock	0.066	0.023	0.171	3.370	3.436	n.a.	7.07	0.35	0.01	52.40	1.02	Gan and Hang et al., 2017 [7]
YD-14	Zhenyuan gold deposit	lamprophyres	whole rock	0.11	0.049	0.11	1.65	1.79	n.a.	3.71	0.45	0.03	16.27	1.08	Gan and Hang et al., 2017 [7]
YD-15	Zhenyuan gold deposit	lamprophyres	whole rock	0.01	0.024	0.019	0.29	0.33	n.a.	0.67	2.40	0.08	33.00	1.14	Gan and Hang et al., 2017 [7]
YD-16	Zhenyuan gold deposit	lamprophyres	whole rock	0.023	0.054	0.033	0.47	0.72	n.a.	1.30	2.35	0.11	31.30	1.53	Gan and Hang et al., 2017 [7]
YD-17	Zhenyuan gold deposit	lamprophyres	whole rock	0.051	0.036	0.11	3.55	3.74	n.a.	7.49	0.71	0.01	73.33	1.05	Gan and Hang et al., 2017 [7]
YD-19	Zhenyuan gold deposit	lamprophyres	whole rock	0.17	0.21	0.11	2.57	2.54	n.a.	5.60	1.24	0.08	14.94	0.99	Gan and Hang et al., 2017 [7]
YD-20	Zhenyuan gold deposit	lamprophyres	whole rock	0.021	0.024	0.014	0.1	0.14	n.a.	0.30	1.14	0.24	6.67	1.40	Gan and Hang et al., 2017 [7]
YD-21	Zhenyuan gold deposit	lamprophyres	whole rock	0.043	0.043	0.16	3.24	3.41	n.a.	6.90	1.00	0.01	79.30	1.05	Gan and Hang et al., 2017 [7]
YD-22	Zhenyuan gold deposit	lamprophyres	whole rock	0.1	0.02	0.17	3.14	2.93	n.a.	6.36	0.20	0.01	29.30	0.93	Gan and Hang et al., 2017 [7]
YD-23	Zhenyuan gold deposit	lamprophyres	whole rock	0.059	0.033	0.21	4.47	4.31	n.a.	9.08	0.56	0.01	73.05	0.96	Gan and Hang et al., 2017 [7]
RA95-3	Argentina	volcanic rocks	whole rock	0.0014	0.0047	0.0012	0.033	0.017	n.a.	0.06	3.36	0.14	12.14	0.52	Park et al., 2019
P17-4	Argentina	volcanic rocks	whole rock	0.0098	0.002	0.0011	0.071	0.046	n.a.	0.13	0.20	0.03	4.69	0.65	Park et al., 2019
P17-6	Argentina	volcanic rocks	whole rock	0.0281	0.0179	0.0183	0.344	0.214	n.a.	0.62	0.64	0.05	7.62	0.62	Park et al., 2019
2208-483	Victoria	gabbro	whole rock	0.07	0.09	0.13	3.64	4.48	26.97	8.41	1.29	0.02	64.00	1.23	Jowitt et al., 2012 [8]
2208-484	Victoria	gabbro	whole rock	0.28	0.44	0.46	11.37	16.9	113.52	29.45	1.57	0.04	60.36	1.49	Jowitt et al., 2012 [8]
2208-485	Victoria	gabbro	whole rock	0.24	0.41	0.39	8.7	12.46	28.81	22.2	1.71	0.05	51.92	1.43	Jowitt et al., 2012 [8]
2208-486	Victoria	gabbro	whole rock	0.15	0.2	0.23	5.71	6.62	24.03	12.91	1.33	0.04	44.13	1.16	Jowitt et al., 2012 [8]
128198	Yilgarn Craton	lamprophyres	whole rock	0.33	0.26	0.26	3.07	2.7	13.81	6.62	0.79	0.08	8.18	0.88	Choi et al., 2020 [9]
128200	Yilgarn Craton	lamprophyres	whole rock	0.11	0.09	0.26	2.03	1.42	5.7	3.91	0.82	0.04	12.91	0.70	Choi et al., 2020 [9]
JD3-1	Yilgarn Craton	lamprophyres	whole rock	0.24	0.43	0.43	4.31	4.72	2.44	10.13	1.79	0.10	19.67	1.10	Choi et al., 2020 [9]
Z36408	Yilgarn Craton	lamprophyres	whole rock	0.17	0.29	0.26	4.3	1.86	2.5	6.88	1.71	0.07	10.94	0.43	Choi et al., 2020 [9]
Z36413	Yilgarn Craton	lamprophyres	whole rock	0.17	0.26	0.28	2.82	1.16	0.5	4.69	1.53	0.09	6.82	0.41	Choi et al., 2020 [9]
Z36406	Yilgarn Craton	lamprophyres	whole rock	0.19	0.31	0.3	2.27	1.54	0.4	4.61	1.63	0.14	8.11	0.68	Choi et al., 2020 [9]

	Mafic dike from subduction-metasomatized lithospheric mantle														
LKXDJ-3-1	Jiaobei terrane	mafic dike	whole rock	0.03	0.05	0.03	0.57	0.47	n.a.	1.15	1.67	0.09	15.67	0.82	Deng et al., 2017 [3]
LKXDJ-3-3	Jiaobei terrane	mafic dike	whole rock	0.03	0.05	0.03	0.57	0.49	n.a.	1.17	1.67	0.09	16.33	0.86	Deng et al., 2017 [3]
LKXDJ-3-4	Jiaobei terrane	mafic dike	whole rock	0.03	0.05	0.04	0.68	0.52	n.a.	1.32	1.67	0.07	17.33	0.76	Deng et al., 2017 [3]
LKXDJ-6-1	Jiaobei terrane	mafic dike	whole rock	0.04	0.06	0.03	0.55	0.38	n.a.	1.06	1.50	0.11	9.50	0.69	Deng et al., 2017 [3]
LKXDJ-6-3	Jiaobei terrane	mafic dike	whole rock	0.04	0.05	0.03	0.46	0.37	n.a.	0.95	1.25	0.11	9.25	0.80	Deng et al., 2017 [3]
LKXDJ-6-4	Jiaobei terrane	mafic dike	whole rock	0.06	0.07	0.03	0.44	0.57	n.a.	1.17	1.17	0.16	9.50	1.30	Deng et al., 2017 [3]
LKXDJ-6-5	Jiaobei terrane	mafic dike	whole rock	0.02	0.04	0.02	0.35	0.29	n.a.	0.72	2.00	0.11	14.50	0.83	Deng et al., 2017 [3]
ZYLL-5-3	Jiaobei terrane	mafic dike	whole rock	0.08	0.1	0.06	1.06	1.06	n.a.	2.36	1.25	0.09	13.25	1.00	Deng et al., 2017 [3]
ZYLL-7-1	Jiaobei terrane	mafic dike	whole rock	0.06	0.09	0.06	0.91	0.97	n.a.	2.09	1.50	0.10	16.17	1.07	Deng et al., 2017 [3]
ZYLL-7-2	Jiaobei terrane	mafic dike	whole rock	0.11	0.2	0.08	1.31	1.5	n.a.	3.20	1.82	0.15	13.64	1.15	Deng et al., 2017 [3]
ZYLL-7-3	Jiaobei terrane	mafic dike	whole rock	0.16	0.37	0.08	1.26	1.37	n.a.	3.24	2.31	0.29	8.56	1.09	Deng et al., 2017 [3]
ZYJL-1-1	Jiaobei terrane	mafic dike	whole rock	0.03	0.07	0.03	0.42	0.44	n.a.	0.99	2.33	0.17	14.67	1.05	Deng et al., 2017 [3]
ZYJL-1-2	Jiaobei terrane	mafic dike	whole rock	0.05	0.08	0.05	0.5	0.43	n.a.	1.11	1.60	0.16	8.60	0.86	Deng et al., 2017 [3]
LZYD-1-6	Jiaobei terrane	mafic dike	whole rock	0.13	0.07	0.16	1.75	1.88	n.a.	3.99	0.54	0.04	14.46	1.07	Deng et al., 2017 [3]
LZYD-1-7	Jiaobei terrane	mafic dike	whole rock	0.18	0.09	0.15	2	1.81	n.a.	4.23	0.50	0.05	10.06	0.91	Deng et al., 2017 [3]
LZYD-1-8	Jiaobei terrane	mafic dike	whole rock	0.26	0.43	0.13	1.62	1.62	n.a.	4.06	1.65	0.27	6.23	1.00	Deng et al., 2017 [3]
LZYD-1-9	Jiaobei terrane	mafic dike	whole rock	0.08	0.05	0.08	1.71	1.36	n.a.	3.28	0.63	0.03	17.00	0.80	Deng et al., 2017 [3]
LZYD-1-10	Jiaobei terrane	mafic dike	whole rock	0.14	0.14	0.13	1.76	1.84	n.a.	4.01	1.00	0.08	13.14	1.05	Deng et al., 2017 [3]
LZYD-4-1	Jiaobei terrane	mafic dike	whole rock	0.04	0.1	0.02	0.32	0.32	n.a.	0.80	2.50	0.31	8.00	1.00	Deng et al., 2017 [3]
LZYD-4-2	Jiaobei terrane	mafic dike	whole rock	0.03	0.05	0.02	0.33	0.27	n.a.	0.70	1.67	0.15	9.00	0.82	Deng et al., 2017 [3]
PDCZ-1-1	Jiaobei terrane	mafic dike	whole rock	0.13	0.22	0.08	0.76	0.62	n.a.	1.81	1.69	0.29	4.77	0.82	Deng et al., 2017 [3]
PDCZ-1-2	Jiaobei terrane	mafic dike	whole rock	0.22	0.31	0.13	2.08	1.02	n.a.	3.76	1.41	0.15	4.64	0.49	Deng et al., 2017 [3]
PDCZ-2-1	Jiaobei terrane	mafic dike	whole rock	0.05	0.09	0.04	0.54	0.52	n.a.	1.24	1.80	0.17	10.40	0.96	Deng et al., 2017 [3]
PDCZ-2-2	Jiaobei terrane	mafic dike	whole rock	0.05	0.09	0.04	0.5	0.42	n.a.	1.10	1.80	0.18	8.40	0.84	Deng et al., 2017 [3]
LXHL-1-1	Jiaobei terrane	mafic dike	whole rock	0.02	0.04	0.02	0.32	0.26	n.a.	0.66	2.00	0.13	13.00	0.81	Deng et al., 2017 [3]
MPYL-1-1	Sulu orogenic belt	mafic dike	whole rock	0.03	0.1	0.02	0.43	0.26	n.a.	0.84	3.33	0.23	8.67	0.60	Deng et al., 2017 [3]
MPYL-1-2	Sulu orogenic belt	mafic dike	whole rock	0.03	0.08	0.03	0.47	0.39	n.a.	1.00	2.67	0.17	13.00	0.83	Deng et al., 2017 [3]
MPYL-1-3	Sulu orogenic belt	mafic dike	whole rock	0.03	0.09	0.03	0.43	0.25	n.a.	0.83	3.00	0.21	8.33	0.58	Deng et al., 2017 [3]
MPYL- 2-3	Sulu orogenic belt	mafic dike	whole rock	0.02	0.08	0.03	0.43	0.23	n.a.	0.79	4.00	0.19	11.50	0.53	Deng et al., 2017 [3]
MPWGZ- 1-1	Sulu orogenic belt	mafic dike	whole rock	0.21	0.39	0.06	0.71	0.47	n.a.	1.84	1.86	0.55	2.24	0.66	Deng et al., 2017 [3]
MPWGZ- 1-3	Sulu orogenic belt	mafic dike	whole rock	0.04	0.11	0.03	0.57	0.44	n.a.	1.19	2.75	0.19	11.00	0.77	Deng et al., 2017 [3]
MPWGZ-1-5	Sulu orogenic belt	mafic dike	whole rock	0.07	0.19	0.05	0.75	0.56	n.a.	1.62	2.71	0.25	8.00	0.75	Deng et al., 2017 [3]
LYGC-1-1	Sulu orogenic belt	mafic dike	whole rock	0.02	0.07	0.03	0.43	0.43	n.a.	0.98	3.50	0.16	21.50	1.00	Deng et al., 2017 [3]
LYGC-1-2	Sulu orogenic belt	mafic dike	whole rock	0.03	0.06	0.03	0.4	0.44	n.a.	0.96	2.00	0.15	14.67	1.10	Deng et al., 2017 [3]
LYGC-1-5	Sulu orogenic belt	mafic dike	whole rock	0.03	0.06	0.04	0.49	0.47	n.a.	1.09	2.00	0.12	15.67	0.96	Deng et al., 2017 [3]
LYGC2-1	Sulu orogenic belt	mafic dike	whole rock	0.05	0.11	0.09	1.18	1.19	n.a.	2.62	2.20	0.09	23.80	1.01	Deng et al., 2017 [3]
LYGC2-3	Sulu orogenic belt	mafic dike	whole rock	0.07	0.11	0.08	1.45	1.41	n.a.	3.12	1.57	0.08	20.14	0.97	Deng et al., 2017 [3]
LYGC2-4	Sulu orogenic belt	mafic dike	whole rock	0.06	0.11	0.09	1.31	1.28	n.a.	2.85	1.83	0.08	21.33	0.98	Deng et al., 2017 [3]
RSXC- 1-1	Sulu orogenic belt	mafic dike	whole rock	0.23	0.44	0.07	0.48	0.63	n.a.	1.85	1.91	0.92	2.74	1.31	Deng et al., 2017 [3]

Table S3. In situ trace elements of pyrites from the Aksu Neoproterozoic diabase dykes and lode gold deposits in Chinese South Tianshan (data in ppm).

Sample no.	Mineral	197Au	107Ag	109Ag	57Fe	25Mg	27Al	29Si	43Ca	49Ti	51V	53Cr	55Mn	59Co	60Ni	65Cu	66Zn	71Ga	72Ge	75As	77Se	95Mo	111Cd	115In	118Sn	121Sb	138Ba	184W	208Pb	209Bi	Reference
AKSQ15-1-1	Pyrite	b.d.l	b.d.l	b.d.l	445084.71	23.42	986.48	6526.06	9415.48	8240.22	118.33	2.53	4.56	184.81	23.79	11.99	b.d.l	0.32	3.16	539.65	34.00	0.03	0.09	0.00	0.67	0.40	2.13	0.13	17.37	1.89	This study
AKSQ15-1-2	Pyrite	0.07	b.d.l	b.d.l	449553.75	120.01	824.58	4886.40	7216.75	6576.73	99.15	1.72	8.01	144.01	18.77	12.32	3.87	0.22	2.76	525.02	33.13	0.08	b.d.l	0.01	0.50	0.82	8.15	0.21	30.93	2.16	This study
AKSQ15-1-3	Pyrite	b.d.l	b.d.l	b.d.l	464635.52	10.54	4.97	333.28	b.d.l	8.13	b.d.l	1.42	b.d.l	308.12	47.55	b.d.l	b.d.l	b.d.l	3.40	390.21	49.93	b.d.l	0.10	b.d.l	b.d.l	0.79	b.d.l	b.d.l	24.52	1.77	This study
AKSQ22-1-4	Pyrite	b.d.l	2.03	2.29	465313.92	10.23	13.52	b.d.l	b.d.l	6.84	b.d.l	b.d.l	1.43	38.89	3.03	29.00	b.d.l	b.d.l	2.89	118.59	69.83	b.d.l	b.d.l	b.d.l	b.d.l	0.33	0.06	b.d.l	11.20	2.05	This study
AKSQ22-1-5	Pyrite	b.d.l	b.d.l	b.d.l	465106.37	19.54	37.03	b.d.l	b.d.l	161.07	2.56	b.d.l	2.04	23.03	5.86	5.90	b.d.l	b.d.l	3.85	479.36	58.59	0.16	b.d.l	b.d.l	b.d.l	0.88	1.74	b.d.l	11.57	1.54	This study
AKSQ22-1-6	Pyrite	0.05	b.d.l	b.d.l	464877.42	b.d.l	45.62	311.76	b.d.l	7.21	0.06	b.d.l	b.d.l	97.36	130.46	0.76	b.d.l	b.d.l	2.23	12.54	32.40	b.d.l	b.d.l	b.d.l	b.d.l	0.15	0.53	0.10	1.06	0.14	This study
AKSQ22-1-7	Pyrite	b.d.l	b.d.l	b.d.l	465253.02	b.d.l	b.d.l	b.d.l	b.d.l	7.88	b.d.l	b.d.l	b.d.l	18.42	6.55	b.d.l	2.28	0.04	2.92	603.38	54.14	b.d.l	b.d.l	b.d.l	0.06	b.d.l	b.d.l	b.d.l	0.37	0.04	This study
AKSQ22-1-8	Pyrite	0.34	17.50	6.31	395990.63	94.92	1376.98	55035.29	19062.27	64.66	40.52	36.39	76.66	269.69	43.19	201.50	11.84	4.41	5.10	574.11	101.64	0.92	11.89	0.10	1.81	4.37	10.21	0.23	171.16	4.65	This study
AKSQ23-1-9	Pyrite	0.02	b.d.l	b.d.l	464752.14	10.62	18.04	238.64	b.d.l	5.16	0.13	2.37	1.12	261.74	52.31	2.40	1.15	b.d.l	2.54	446.86	36.37	0.05	b.d.l	0.00	b.d.l	0.51	0.02	b.d.l	18.67	0.69	This study
AKSQ23-1-10	Pyrite	b.d.l	b.d.l	b.d.l	465396.38	b.d.l	4.08	b.d.l	b.d.l	28.16	1.43	b.d.l	b.d.l	2.80	1.08	b.d.l	b.d.l	0.04	2.24	108.09	43.20	b.d.l	b.d.l	b.d.l	b.d.l	b.d.l	b.d.l	b.d.l	4.67	0.43	This study
AKSQ23-1-11	Pyrite	b.d.l	b.d.l	b.d.l	465114.69	b.d.l	b.d.l	192.82	b.d.l	13.53	b.d.l	b.d.l	0.62	83.44	57.32	b.d.l	b.d.l	0.11	3.21	28.42	25.56	b.d.l	b.d.l	b.d.l	b.d.l	b.d.l	b.d.l	b.d.l	0.95	0.05	This study
AKSQ23-1-12	Pyrite	b.d.l	b.d.l	b.d.l	451744.81	69.82	679.18	4399.04	6136.61	5566.25	117.60	24.04	5.43	112.15	32.53	16.56	2.20	0.25	3.46	318.15	28.87	0.02	b.d.l	b.d.l	0.27	1.08	1.46	0.06	30.16	1.17	This study
AKSQ23-1-13	Pyrite	0.03	b.d.l	b.d.l	465355.22	0.79	2.15	b.d.l	b.d.l	8.03	b.d.l	b.d.l	0.61	29.36	2.65	1.48	b.d.l	b.d.l	3.01	212.14	47.07	b.d.l	0.15	b.d.l	b.d.l	0.20	0.02	b.d.l	4.87	0.24	This study
AKSQ23-1-14	Pyrite	0.02	b.d.l	b.d.l	463124.43	1.60	2.65	2177.14	b.d.l	9.54	b.d.l	b.d.l	b.d.l	28.65	4.81	2.71	b.d.l	0.04	2.86	418.35	35.45	b.d.l	b.d.l	b.d.l	b.d.l	b.d.l	b.d.l	b.d.l	14.16	1.32	This study
AKSQ23-1-15	Pyrite	b.d.l	b.d.l	b.d.l	447728.94	3952.40	4850.56	7454.85	1512.84	2129.68	25.25	b.d.l	89.54	134.98	15.31	19.61	29.15	2.74	b.d.l	233.17	58.44	b.d.l	b.d.l	b.d.l	b.d.l	1.21	22.02	b.d.l	13.43	0.49	This study
AKSQ23-1-16	Pyrite	0.30	3.96	3.00	444604.70	550.99	1404.42	6751.14	7497.68	8065.05	115.78	2.35	23.19	473.03	116.33	377.63	13.39	0.46	2.03	200.75	64.35	b.d.l	b.d.l	b.d.l	0.52	2.54	297.57	0.41	106.30	6.70	This study
AKSQ23-1-17	Pyrite	b.d.l	b.d.l	b.d.l	371770.71	750.93	841.38	5726.51	########	5677.34	124.37	2.20	283.57	223.73	75.16	120.38	12.54	3.28	4.09	75.42	63.59	0.06	b.d.l	0.01	0.50	b.d.l	39.68	0.29	20.61	2.16	This study
AKSQ23-1-18	Pyrite	0.01	0.79	b.d.l	464294.05	98.95	24.69	566.76	286.40	10.75	1.89	b.d.l	6.94	181.81	72.97	1.02	b.d.l	b.d.l	2.32	179.64	43.37	b.d.l	0.08	b.d.l	b.d.l	b.d.l	0.07	b.d.l	5.23	0.13	This study
AKSQ23-1-19	Pyrite	0.04	b.d.l	b.d.l	465343.91	6.16	2.53	b.d.l	b.d.l	4.85	0.16	b.d.l	1.25	40.45	16.78	4.35	b.d.l	b.d.l	2.18	141.85	40.89	b.d.l	b.d.l	b.d.l	0.04	b.d.l	b.d.l	b.d.l	9.03	0.40	This study
AKSQ23-1-20	Pyrite	b.d.l	b.d.l	b.d.l	465134.31	b.d.l	21.63	b.d.l	b.d.l	8.72	b.d.l	b.d.l	b.d.l	227.72	28.86	b.d.l	b.d.l	0.18	3.69	161.25	52.41	b.d.l	b.d.l	b.d.l	b.d.l	b.d.l	3.00	b.d.l	0.75	0.06	This study
AKSQ23-1-21	Pyrite	b.d.l	b.d.l	b.d.l	465039.37	b.d.l	b.d.l	225.59	243.73	8.44	b.d.l	b.d.l	b.d.l	1.04	6.53	b.d.l	2.10	b.d.l	1.96	85.69	30.07	0.04	0.16	b.d.l	b.d.l	b.d.l	b.d.l	b.d.l	0.89	0.12	This study

AKSQ23-1 - 22	Pyrite	b.d.l	b.d.l	b.d.l	465390.30	7.44	3.06	b.d.l	b.d.l	5.13	0.09	b.d.l	1.22	13.99	16.89	1.44	b.d.l	0.06	3.12	75.34	35.81	b.d.l	b.d.l	0.01	b.d.l	0.59	0.07	b.d.l	6.77	0.49	This study
AKSQ23-1 - 23	Pyrite	0.07	b.d.l	b.d.l	465381.63	7.71	9.78	b.d.l	b.d.l	10.83	b.d.l	b.d.l	b.d.l	13.71	3.44	4.48	b.d.l	b.d.l	2.78	110.69	51.80	0.11	b.d.l	b.d.l	b.d.l	b.d.l	b.d.l	b.d.l	0.53	0.13	This study
AKSQ23-1 - 24	Pyrite	b.d.l	b.d.l	0.71	465058.77	b.d.l	b.d.l	221.85	b.d.l	7.44	b.d.l	b.d.l	b.d.l	70.45	23.52	1.28	b.d.l	b.d.l	2.36	291.20	44.85	b.d.l	b.d.l	0.01	0.09	0.17	b.d.l	b.d.l	1.82	0.11	This study
AKSQ23-1 - 25	Pyrite	0.04	b.d.l	b.d.l	464931.74	27.83	2.89	265.71	b.d.l	4.91	0.28	b.d.l	3.63	141.62	44.13	2.21	1.47	b.d.l	2.97	139.29	45.54	b.d.l	b.d.l	0.01	b.d.l	0.61	b.d.l	b.d.l	11.93	0.75	This study
AKSQ23-1 - 26	Pyrite	b.d.l	b.d.l	b.d.l	465100.49	b.d.l	b.d.l	211.00	b.d.l	6.31	b.d.l	b.d.l	b.d.l	60.76	44.09	1.22	b.d.l	b.d.l	3.14	138.75	43.46	b.d.l	b.d.l	b.d.l	b.d.l	b.d.l	0.01	0.02	1.80	0.11	This study
AKSQ23-1 - 27	Pyrite	b.d.l	b.d.l	b.d.l	464935.84	b.d.l	5.73	164.74	b.d.l	5.62	0.04	b.d.l	b.d.l	271.50	52.49	b.d.l	2.36	0.02	2.89	118.06	40.28	0.03	b.d.l	b.d.l	0.06	0.15	0.01	b.d.l	1.10	0.10	This study
AKSQ23-1 - 28	Pyrite	0.10	b.d.l	b.d.l	415194.80	186.28	2523.89	15934.26	22115.30	22074.27	432.61	10.33	16.28	79.30	15.26	33.53	3.73	0.89	1.69	108.79	31.07	0.22	b.d.l	0.01	2.00	0.61	5.75	0.36	22.25	1.09	This study
CN1_9	Pyrite	n.a.	0.299	0.299	484032	1.486	0.791	213.5	41.22	36.19	b.d.l	2.102	3.944	0.394	b.d.l	3.915	7.863	0.105	4.414	1252	n.a.	0.168	b.d.l	0.054	b.d.l	0.96	0.273	b.d.l	0.336	0.082	Zhang et al., 2022 [10]
CN1_6	Pyrite	n.a.	0.178	0.178	497812	4.662	595	869.8	37.03	32.52	0.844	4.811	5.038	691.3	327.7	3.888	6.784	0.081	3.411	9230	n.a.	0.095	b.d.l	0.023	0.331	7.436	1.852	94.25	782.9	4.218	Zhang et al., 2022 [10]
CN1_7	Pyrite	n.a.	b.d.l	b.d.l	467810	b.d.l	9.275	211.6	13.16	38.04	b.d.l	2.23	3.432	0.268	27.13	2.552	14.47	b.d.l	2.393	9064	n.a.	0.124	0.229	b.d.l	b.d.l	1.648	b.d.l	1.035	0.936	0.295	Zhang et al., 2022 [10]
CN1_8	Pyrite	n.a.	0.033	0.033	463930	94.57	31.32	668.3	5.196	33.64	b.d.l	2.499	3.903	0.661	1.987	2.947	9.216	b.d.l	2.868	8889	n.a.	0.117	0.267	0.011	b.d.l	2.952	b.d.l	b.d.l	3.695	2.159	Zhang et al., 2022 [10]
CN8_1	Pyrite	n.a.	2.503	2.503	528594	5.077	0.116	1312	6.902	19.93	b.d.l	5.589	3.496	9.619	470.4	9.356	6.22	b.d.l	2.447	275.8	n.a.	0.059	b.d.l	b.d.l	b.d.l	242.1	b.d.l	b.d.l	221.1	12.32	Zhang et al., 2022 [10]
CN8_2	Pyrite	n.a.	0.691	0.691	525453	1.859	1.634	269.5	b.d.l	23.43	0.079	2.547	3.685	9.351	302.3	3.224	5.626	0.096	2.83	66.99	n.a.	0.015	0.213	0.019	0.515	28.87	b.d.l	0.018	20.23	1.965	Zhang et al., 2022 [10]
CN8_3	Pyrite	n.a.	0.176	0.176	506964	2.814	2.879	232	25.2	28.46	0.07	2.67	3.797	1.097	41.42	1.939	5.231	0.189	1.621	25.62	n.a.	0.017	b.d.l	0.136	b.d.l	0.6	b.d.l	0.026	4.323	0.049	Zhang et al., 2022 [10]
CN8_4	Pyrite	n.a.	0.65	0.65	506171	b.d.l	0.77	202.3	11.33	26.17	0.095	2.021	41.84	0.119	25.27	3.331	6.108	b.d.l	3.234	567.1	n.a.	b.d.l	0.033	b.d.l	0.091	23.73	b.d.l	b.d.l	7.91	0.42	Zhang et al., 2022 [10]
CN8_5	Pyrite	n.a.	0.58	0.58	516397	2.59	b.d.l	197.3	4.444	27.98	0.068	5.838	4.009	0.125	9.304	4.756	5.839	0.028	2.662	161.4	n.a.	b.d.l	0.266	0.004	b.d.l	36.23	0.074	0.018	37.61	1.43	Zhang et al., 2022 [10]
CN8_9	Pyrite	n.a.	5.76	5.76	497585	0.528	b.d.l	167.8	1.89	28.24	b.d.l	3.612	3.592	0.205	24.93	10.65	5.987	b.d.l	3.319	49.94	n.a.	0.132	0.051	0.01	0.392	47.69	0.08	b.d.l	43.87	3.829	Zhang et al., 2022 [10]
CN8_10	Pyrite	n.a.	2.17	2.17	503551	2.854	8.74	328.1	13.89	29.61	0.062	7.082	5.236	15.94	58.66	10.19	5.892	0.053	2.474	5033	n.a.	b.d.l	b.d.l	b.d.l	0.454	54.75	0.037	b.d.l	107.5	4.109	Zhang et al., 2022 [10]
CN8_11	Pyrite	n.a.	75.65	75.65	503008	4.231	b.d.l	175.6	b.d.l	28.06	0.046	2.701	4.423	0.25	b.d.l	29.96	6.986	b.d.l	1.856	417.8	n.a.	b.d.l	0.3	0.029	0.864	803	0.072	b.d.l	1408	8.086	Zhang et al., 2022 [10]
CN8_12	Pyrite	n.a.	b.d.l	b.d.l	509263	0.61	b.d.l	182.9	b.d.l	27.97	0.056	2.394	3.492	0.114	1.62	2.448	8.568	b.d.l	2.626	1552	n.a.	0.125	0.09	0.021	b.d.l	6.601	0.016	b.d.l	12.17	0.456	Zhang et al., 2022 [10]
CN8_13	Pyrite	n.a.	0.743	0.743	508710	1.502	28.88	345.2	10.47	32.22	0.28	5.515	5.316	0.356	50.22	3.707	6.318	0.115	2.829	200.1	n.a.	b.d.l	0.158	0.004	0.036	33.91	0.189	0.095	25.65	3.435	Zhang et al., 2022 [10]
CN8_16	Pyrite	n.a.	0.445	0.445	262049	b.d.l	b.d.l	251.5	b.d.l	11.72	0.079	1.343	2.619	0.824	1.892	0.731	2.241	b.d.l	2.671	545432	n.a.	b.d.l	0.284	0.491	0.198	1363	0.202	b.d.l	0.751	2.278	Zhang et al., 2022 [10]
CN8_17	Pyrite	n.a.	1.044	1.044	238207	18.41	b.d.l	326.9	63.81	7.419	b.d.l	2.991	9.589	32.2	40.72	0.762	22.52	b.d.l	2.218	569566	n.a.	0.079	0.091	0.46	0.627	1992	0.625	b.d.l	55.6	15.81	Zhang et al., 2022 [10]
CN8_18	Pyrite	n.a.	1.241	1.241	494595	b.d.l	1.061	103.6	14.06	32.21	0.014	2.775	3.694	4.764	519.9	0.69	5.466	b.d.l	2.886	2077	n.a.	0.137	0.202	0.006	0.569	287.1	b.d.l	b.d.l	432.5	11.45	Zhang et al., 2022 [10]

CN8_19	Pyrite	n.a.	0.874	0.874	484111	b.d.l	b.d.l	211.4	b.d.l	24.26	0.069	5.121	3.46	1.572	61	3.248	5.157	0.092	3.079	965.5	n.a.	0.06	b.d.l	0.012	0.523	55.38	b.d.l	b.d.l	44.14	3.659	Zhang et al., 2022 [10]
CN8_20	Pyrite	n.a.	0.195	0.195	507240	2.058	98.84	289.5	35.86	101.9	0.625	7.368	3.988	0.097	18.47	3.577	4.687	0.112	4.528	206.1	n.a.	0.079	0.046	0.002	0.349	2.654	0.507	1.354	1.535	0.436	Zhang et al., 2022 [10]
CN8_21	Pyrite	n.a.	1.208	1.208	503273	16.57	2.077	87.04	54.2	30.53	0.141	4.003	7.671	0.175	22.92	4.594	14.02	b.d.l	2.887	122	n.a.	0.067	b.d.l	0.022	0.394	58.4	0.124	b.d.l	16.99	5.593	Zhang et al., 2022 [10]
CN8_6	Pyrite	n.a.	b.d.l	b.d.l	510449	0.201	b.d.l	218.2	b.d.l	99.93	0.229	2.708	3.62	7.218	377.6	2.42	4.667	0.207	3.666	8526	n.a.	0.106	0.071	0.001	b.d.l	1.643	b.d.l	4.799	0.411	0.06	Zhang et al., 2022 [10]
CN8_7	Pyrite	n.a.	3.197	3.197	526015	0.155	0.118	322.4	b.d.l	27.58	b.d.l	5.868	5.82	3.019	169.8	9.353	6.174	b.d.l	2.296	52.4	n.a.	0.101	0.102	0.004	0.175	69.54	b.d.l	b.d.l	64.46	3.713	Zhang et al., 2022 [10]
CN8_8	Pyrite	n.a.	9.876	9.876	511813	b.d.l	b.d.l	272.3	0.039	32.74	b.d.l	13.72	3.561	0.327	129.5	6.983	10.37	b.d.l	2.758	29.5	n.a.	0.152	0.124	b.d.l	0.388	23.14	0.015	0.016	24.51	2.072	Zhang et al., 2022 [10]
CN8_22	Pyrite	n.a.	5.675	5.675	509539	54.04	3.459	227	0.444	34.04	0.031	3.656	16.46	0.235	575.5	16.63	8.669	0.116	3.658	241.5	n.a.	b.d.l	b.d.l	0.025	0.063	352.9	0.125	b.d.l	247.6	24.08	Zhang et al., 2022 [10]
CN8_23	Pyrite	n.a.	2.258	2.258	515526	9.449	61.64	248.1	25.5	27.31	b.d.l	5.149	5.032	0.742	1170	7.457	6.052	0.493	3.548	124.6	n.a.	0.393	0.008	0.027	0.319	56.24	0.143	b.d.l	57.29	5.832	Zhang et al., 2022 [10]
CN8_24	Pyrite	n.a.	3.073	3.073	497192	b.d.l	0.225	298.9	b.d.l	36.87	0.045	3.599	4.16	0.133	b.d.l	8.412	7.049	0.089	2.82	89.37	n.a.	b.d.l	b.d.l	0.009	b.d.l	51.64	b.d.l	b.d.l	75.89	3.387	Zhang et al., 2022 [10]
CN6_6	Pyrite	n.a.	1.951	1.951	475332	b.d.l	2.09	294.2	b.d.l	31.05	0.036	3.307	2.783	0.114	1.8	2.327	4.692	b.d.l	3.702	4114	n.a.	b.d.l	0.067	0.014	b.d.l	60.35	b.d.l	b.d.l	13.21	0.087	Zhang et al., 2022 [10]
CN6_9	Pyrite	n.a.	0.211	0.211	485903	0.316	4.204	291.9	36.45	29.2	0.037	0.708	3.4	0.382	6.489	10.57	5.774	b.d.l	2.852	2733	n.a.	b.d.l	0.157	0.027	b.d.l	6.871	b.d.l	0.043	1.62	0.013	Zhang et al., 2022 [10]
CN12_4	Pyrite	n.a.	0.274	0.274	471461	b.d.l	138.8	134.7	27.74	36.92	0.153	1.478	3.058	0.323	b.d.l	2.864	7.46	b.d.l	2.312	908	n.a.	0.019	b.d.l	0.02	b.d.l	10.86	0.267	b.d.l	8.162	0.015	Zhang et al., 2022 [10]
CN12_5	Pyrite	n.a.	0.079	0.079	477733	2.682	216.3	295.4	b.d.l	34.17	b.d.l	1.329	3.817	0.142	b.d.l	1.683	8.412	b.d.l	3.707	243	n.a.	b.d.l	0.004	0.021	0.553	13.63	0.779	0.119	9.764	0.079	Zhang et al., 2022 [10]
CN12_6	Pyrite	n.a.	0.663	0.663	474988	1.59	306	580	20.8	28.43	0.021	3.155	3.464	0.781	14.97	1.852	6.013	0.15	3.261	621.1	n.a.	0.1	0.195	b.d.l	0.545	22.48	0.559	0.031	22.07	0.054	Zhang et al., 2022 [10]
CN12_7	Pyrite	n.a.	3.222	3.222	496310	2.225	6.977	159.8	35.57	31.83	0.218	5.811	3.432	5.91	10.91	5.454	8.181	b.d.l	3.287	213.3	n.a.	b.d.l	0.045	0.002	b.d.l	76.58	0.024	9.195	86.15	0.135	Zhang et al., 2022 [10]
CN12_9	Pyrite	n.a.	3.864	3.864	472235	19.1	4.515	199.2	0.872	30.7	0.014	1.479	3.683	0.243	1.344	7.143	7.129	0.074	4.359	1328	n.a.	0.009	0.187	0.048	b.d.l	185.3	0.039	b.d.l	233.8	0.149	Zhang et al., 2022 [10]
CN6_7	Pyrite	n.a.	b.d.l	b.d.l	476875	b.d.l	b.d.l	285	12.39	29.77	0.064	7.998	3.199	263.7	132.1	1.049	6.897	0.266	3.961	2132	n.a.	0.007	0.107	b.d.l	0.063	2.213	0.097	0.021	1.041	1.76	Zhang et al., 2022 [10]
CN6_8	Pyrite	n.a.	0.032	0.032	498206	b.d.l	0.604	310.6	b.d.l	30.62	b.d.l	4.342	3.709	0.478	35.23	1.304	5.943	b.d.l	3.6	2734	n.a.	0.121	0.105	b.d.l	0.488	0.768	b.d.l	0.046	1.275	b.d.l	Zhang et al., 2022 [10]

n.a. represents no analyzed data.

Table S4. Compilation of in-situ Au and Ag contents of pyrite from Patagonian mantle xenoliths and Jiaodong gold provinces (data in ppm).

Sample no.	Gold deposit	Mineral	Au197	Ag107	Au/Ag ratio	Reference
AKSQ22-1 - 4	Neoproterozoic diabase	Pyrite	0	2.03	0	This study
AKSQ22-1 - 8	Neoproterozoic diabase	Pyrite	0.34	17.5	0.02	This study
AKSQ23-1 - 16	Neoproterozoic diabase	Pyrite	0.3	3.96	0.08	This study
AKSQ23-1 - 18	Neoproterozoic diabase	Pyrite	0.01	0.79	0.01	This study
awanda-03	Aawanda gold deposit	Pyrite	0.05	0.58	0.09	This study
awanda-06	Aawanda gold deposit	Pyrite	0.04	0.44	0.10	This study
awanda-08	Aawanda gold deposit	Pyrite	0.37	0.09	4.40	This study
awanda-09	Aawanda gold deposit	Pyrite	0.02	0.43	0.05	This study
awanda-17	Aawanda gold deposit	Pyrite	0.02	1.57	0.01	This study
awanda-25	Aawanda gold deposit	Pyrite	0.01	0.02	0.72	This study
awanda-01	Aawanda gold deposit	Arsenopyrite	2.00	0.44	4.59	This study
awanda-05	Aawanda gold deposit	Arsenopyrite	0.22	1.06	0.21	This study
awanda-13	Aawanda gold deposit	Arsenopyrite	0.07	0.06	1.08	This study
awanda-14	Aawanda gold deposit	Arsenopyrite	0.39	0.44	0.88	This study
awanda-18	Aawanda gold deposit	Arsenopyrite	0.02	0.14	0.18	This study
P1	Patagonian mantle xenoliths	Pyrite	0.67	0.7	0.96	Tassara et al., 2017 [11]
P2	Patagonian mantle xenoliths	Pyrite	5.96	23.09	0.26	Tassara et al., 2017 [11]
P3	Patagonian mantle xenoliths	Pyrite	4.4	162.96	0.03	Tassara et al., 2017 [11]
P4	Patagonian mantle xenoliths	Pyrite	0	49.31	0.00	Tassara et al., 2017 [11]
P5	Patagonian mantle xenoliths	Pyrite	0	42.9	0.00	Tassara et al., 2017 [11]
P6	Patagonian mantle xenoliths	Pyrite	3.54	64.24	0.06	Tassara et al., 2017 [11]
P7	Patagonian mantle xenoliths	Pyrite	0.02	0.1	0.20	Tassara et al., 2017 [11]
P8	Patagonian mantle xenoliths	Pyrite	0.37	3.22	0.11	Tassara et al., 2017 [11]
P9	Patagonian mantle xenoliths	Pyrite	0.05	2.44	0.02	Tassara et al., 2017 [11]
S1-3-1	Sanshandao	Pyrite	0.73	3.01	0.24	Deng et al., 2020 [12]
S1-2-1	Sanshandao	Pyrite	0.22	1.12	0.20	Deng et al., 2020 [12]
S1-5-2	Sanshandao	Pyrite	0.07	0.51	0.14	Deng et al., 2020 [12]
S1-4-1	Sanshandao	Pyrite	0.32	2.74	0.12	Deng et al., 2020 [12]
S1-4-2	Sanshandao	Pyrite	0.2	2.49	0.08	Deng et al., 2020 [12]
S2-2-1	Sanshandao	Pyrite	0.16	6.21	0.03	Deng et al., 2020 [12]
S2-4-1	Sanshandao	Pyrite	0.25	0.8	0.31	Deng et al., 2020 [12]
S2-5-1	Sanshandao	Pyrite	0.99	0.32	3.09	Deng et al., 2020 [12]
S2-1-1	Sanshandao	Pyrite	0.06	0.47	0.13	Deng et al., 2020 [12]
S2-1-2	Sanshandao	Pyrite	0.05	0.11	0.45	Deng et al., 2020 [12]
S3-4-1	Sanshandao	Pyrite	0.45	2.85	0.16	Deng et al., 2020 [12]

S3-5-1	Sanshandao	Pyrite	0.27	19.66	0.01	Deng et al., 2020 [12]
S3-3-1	Sanshandao	Pyrite	0.08	4.06	0.02	Deng et al., 2020 [12]
S4-1-1	Sanshandao	Pyrite	0.91	15.06	0.06	Deng et al., 2020 [12]
S4-1-2	Sanshandao	Pyrite	1.5	3.21	0.47	Deng et al., 2020 [12]
S4-1-3	Sanshandao	Pyrite	0.92	11.11	0.08	Deng et al., 2020 [12]
S4-3-1	Sanshandao	Pyrite	0.99	0.09	11.00	Deng et al., 2020 [12]
S4-3-2	Sanshandao	Pyrite	1.1	9.99	0.11	Deng et al., 2020 [12]
S4-3-3	Sanshandao	Pyrite	0.91	1.46	0.62	Deng et al., 2020 [12]
S4-3-4	Sanshandao	Pyrite	0.04	29.99	0.00	Deng et al., 2020 [12]
S6-2-1	Sanshandao	Pyrite	0.05	0.37	0.14	Deng et al., 2020 [12]
S6-2-3	Sanshandao	Pyrite	0.25	28.74	0.01	Deng et al., 2020 [12]
S6-1-1	Sanshandao	Pyrite	0.06	0.73	0.08	Deng et al., 2020 [12]
S6-1-2	Sanshandao	Pyrite	0.02	0.42	0.05	Deng et al., 2020 [12]
S6-1-3	Sanshandao	Pyrite	0.12	0.41	0.29	Deng et al., 2020 [12]
S6-3-2	Sanshandao	Pyrite	2.02	0.33	6.12	Deng et al., 2020 [12]
S6-3-3	Sanshandao	Pyrite	0.74	1.02	0.73	Deng et al., 2020 [12]
S7-2-2	Sanshandao	Pyrite	0.03	3.1	0.01	Deng et al., 2020 [12]
S7-1-1	Sanshandao	Pyrite	4.3	0.76	5.66	Deng et al., 2020 [12]
S7-1-2	Sanshandao	Pyrite	0.04	2.29	0.02	Deng et al., 2020 [12]
S7-1-3	Sanshandao	Pyrite	0.09	1.87	0.05	Deng et al., 2020 [12]
S8-1-1	Sanshandao	Pyrite	0.58	0.12	4.83	Deng et al., 2020 [12]
S8-1-2	Sanshandao	Pyrite	0.07	0.57	0.12	Deng et al., 2020 [12]
S8-1-3	Sanshandao	Pyrite	0.17	0.04	4.25	Deng et al., 2020 [12]
S8-2-1	Sanshandao	Pyrite	0.31	15.93	0.02	Deng et al., 2020 [12]
S8-2-2	Sanshandao	Pyrite	0.47	39.19	0.01	Deng et al., 2020 [12]
S9-2-1	Sanshandao	Pyrite	0.17	0.3	0.57	Deng et al., 2020 [12]
S9-2-2	Sanshandao	Pyrite	0.08	0.55	0.15	Deng et al., 2020 [12]
S9-2-3	Sanshandao	Pyrite	0.07	1.38	0.05	Deng et al., 2020 [12]
S9-1-1	Sanshandao	Pyrite	2.94	2.42	1.21	Deng et al., 2020 [12]
S9-1-2	Sanshandao	Pyrite	0.13	5.51	0.02	Deng et al., 2020 [12]
S13 (?)	Sanshandao	Pyrite	0.36	2.39	0.15	Deng et al., 2020 [12]
S13-2-1	Sanshandao	Pyrite	0.03	0.06	0.50	Deng et al., 2020 [12]
S13-2-3	Sanshandao	Pyrite	0.02	3.65	0.01	Deng et al., 2020 [12]
S13-1-1	Sanshandao	Pyrite	0.09	22.64	0.00	Deng et al., 2020 [12]
S13-1-2	Sanshandao	Pyrite	0.02	4.36	0.00	Deng et al., 2020 [12]
S13-1-3	Sanshandao	Pyrite	0.51	32.05	0.02	Deng et al., 2020 [12]
S14-1-1	Sanshandao	Pyrite	0.1	0.93	0.11	Deng et al., 2020 [12]
S14-1-2	Sanshandao	Pyrite	0.37	74.65	0.00	Deng et al., 2020 [12]

S14-1-3	Sanshandao	Pyrite	0.02	2.37	0.01	Deng et al., 2020 [12]
S14-2-1	Sanshandao	Pyrite	0.3	1.18	0.25	Deng et al., 2020 [12]
S14-2-2	Sanshandao	Pyrite	0.03	0.15	0.20	Deng et al., 2020 [12]
S14-2-3	Sanshandao	Pyrite	0.21	1.45	0.14	Deng et al., 2020 [12]
S18-5-1	Sanshandao	Pyrite	0.15	0.05	3.00	Deng et al., 2020 [12]
S19-4-2	Sanshandao	Pyrite	0.02	4.96	0.00	Deng et al., 2020 [12]
S19-4-3	Sanshandao	Pyrite	0.02	0.12	0.17	Deng et al., 2020 [12]
S19-3-2	Sanshandao	Pyrite	0.04	0.42	0.10	Deng et al., 2020 [12]
S19-3-3	Sanshandao	Pyrite	0.01	0.43	0.02	Deng et al., 2020 [12]
S20-5-1	Sanshandao	Pyrite	0.07	0.84	0.08	Deng et al., 2020 [12]
S20-5-2	Sanshandao	Pyrite	0.1	0.46	0.22	Deng et al., 2020 [12]
S20-2-1	Sanshandao	Pyrite	0.09	0.34	0.26	Deng et al., 2020 [12]
S20-2-2	Sanshandao	Pyrite	0.06	0.39	0.15	Deng et al., 2020 [12]
17LL10-1B-01	Linglong	Pyrite	0.008	0.382	0.02	Wang et al., 2022 [4]
17LL10-1B-03	Linglong	Pyrite	0.004	0.464	0.01	Wang et al., 2022 [4]
17LL10-1B-06	Linglong	Pyrite	0.005	0.049	0.10	Wang et al., 2022 [4]
17LL10-1B-08	Linglong	Pyrite	0.004	2.45	0.00	Wang et al., 2022 [4]
17LL10-1B-09	Linglong	Pyrite	0.010	1.28	0.01	Wang et al., 2022 [4]
17LL10-1B-11	Linglong	Pyrite	0.017	0.243	0.07	Wang et al., 2022 [4]
17LL10-1B-12	Linglong	Pyrite	0.029	0.179	0.16	Wang et al., 2022 [4]
17LL10-1B-17	Linglong	Pyrite	0.006	1.08	0.01	Wang et al., 2022 [4]
17LL10-1B-24	Linglong	Pyrite	0.009	0.025	0.36	Wang et al., 2022 [4]
17LL10-1B-25	Linglong	Pyrite	0.014	0.022	0.63	Wang et al., 2022 [4]
17LL10-1B-29	Linglong	Pyrite	0.008	2.92	0.00	Wang et al., 2022 [4]
HLOG-01	Heilangou	Pyrite	73	286	0.26	Li et al., 2022 [13,14]
HLOG-02	Heilangou	Pyrite	14.9	89	0.17	Li et al., 2022 [13,14]
HLOG-03	Heilangou	Pyrite	67.1	34	1.97	Li et al., 2022 [13,14]
HLOG-04	Heilangou	Pyrite	53.4	35	1.53	Li et al., 2022 [13,14]
HLOG-05	Heilangou	Pyrite	92.8	6.6	14.06	Li et al., 2022 [13,14]
HLOG-06	Heilangou	Pyrite	6.8	48.1	0.14	Li et al., 2022 [13,14]
HLOG-07	Heilangou	Pyrite	2.08	13.6	0.15	Li et al., 2022 [13,14]
HLOG-08	Heilangou	Pyrite	3.08	125	0.02	Li et al., 2022 [13,14]
HLOG-09	Heilangou	Pyrite	10.1	36.2	0.28	Li et al., 2022 [13,14]
HLOG-10	Heilangou	Pyrite	1.85	77	0.02	Li et al., 2022 [13,14]
HLOG-11	Heilangou	Pyrite	2.25	4.3	0.52	Li et al., 2022 [13,14]
HLOG-12	Heilangou	Pyrite	0.43	5.8	0.07	Li et al., 2022 [13,14]
HLOG-13	Heilangou	Pyrite	2.99	0.6	4.98	Li et al., 2022 [13,14]
HLOG-16	Heilangou	Pyrite	0.12	0.2	0.60	Li et al., 2022 [13,14]

HLOG-17	Heilangou	Pyrite	6.15	7.8	0.79	Li et al., 2022 [13,14]
HLOG-18	Heilangou	Pyrite	14.1	1.2	11.75	Li et al., 2022 [13,14]
HLOG-26	Heilangou	Pyrite	1.38	32.1	0.04	Li et al., 2022 [13,14]
HLOG-27	Heilangou	Pyrite	2.38	27.1	0.09	Li et al., 2022 [13,14]
HLOG-28	Heilangou	Pyrite	10.2	6.7	1.52	Li et al., 2022 [13,14]
HLOG-29	Heilangou	Pyrite	17.7	10	1.77	Li et al., 2022 [13,14]
HLOG-30	Heilangou	Pyrite	0.96	33.4	0.03	Li et al., 2022 [13,14]
HLOG-31	Heilangou	Pyrite	2.22	24	0.09	Li et al., 2022 [13,14]
HLOG-32	Heilangou	Pyrite	7.1	490	0.01	Li et al., 2022 [13,14]
HLOG-33	Heilangou	Pyrite	5.5	123	0.04	Li et al., 2022 [13,14]
HLOG-34	Heilangou	Pyrite	21.2	158	0.13	Li et al., 2022 [13,14]
XC10D202B1-1	Xincheng	Pyrite	0.016	1.46	0.01	Yang et al., 2016 [15]
XC10D202B1-2	Xincheng	Pyrite	0.061	2.17	0.03	Yang et al., 2016 [15]
XC10D202B1-4	Xincheng	Pyrite	0.035	1.19	0.03	Yang et al., 2016 [15]
XC10D210B5-1	Xincheng	Pyrite	1.14	29.1	0.04	Yang et al., 2016 [15]
XC10D210B5-2	Xincheng	Pyrite	0.113	3.28	0.03	Yang et al., 2016 [15]
XC10D210B5-3	Xincheng	Pyrite	0.14	1.85	0.08	Yang et al., 2016 [15]
XC10D212B4-1	Xincheng	Pyrite	0.281	5.41	0.05	Yang et al., 2016 [15]
XC10D212B4-2	Xincheng	Pyrite	0.117	0.6	0.20	Yang et al., 2016 [15]
XC10D211B4-1	Xincheng	Pyrite	0.495	58.4	0.01	Yang et al., 2016 [15]
XC10D211B4-2	Xincheng	Pyrite	0.166	10.7	0.02	Yang et al., 2016 [15]
XC10D211B4-3	Xincheng	Pyrite	0.019	0.57	0.03	Yang et al., 2016 [15]
XC10D211B4-4	Xincheng	Pyrite	0.254	0.57	0.45	Yang et al., 2016 [15]
XC10D211B4-5	Xincheng	Pyrite	3,759	4,937	0.76	Yang et al., 2016 [15]
XC10D211B4-6	Xincheng	Pyrite	0.211	78.6	0.00	Yang et al., 2016 [15]
XC10D211B4-7	Xincheng	Pyrite	0.195	26.9	0.01	Yang et al., 2016 [15]
XC10D224B3-1	Xincheng	Pyrite	0.323	7.59	0.04	Yang et al., 2016 [15]
XC10D224B3-2	Xincheng	Pyrite	3.610	15.900	0.23	Yang et al., 2016 [15]
XC10D007B7-2	Xincheng	Pyrite	0.02	0.35		Yang et al., 2016 [15]
XC10D007B7-3	Xincheng	Pyrite	0.03	0.25		Yang et al., 2016 [15]
XC10D007B7-4	Xincheng	Pyrite	0.06	7.82		Yang et al., 2016 [15]
XC10D007B7-5	Xincheng	Pyrite	0.08	5.2		Yang et al., 2016 [15]
XC10D007B7-7	Xincheng	Pyrite	0.02	0.7		Yang et al., 2016 [15]
XC10D007B7-8	Xincheng	Pyrite	0.02	0.16		Yang et al., 2016 [15]
XC10D007B7-9	Xincheng	Pyrite	0.02	0.08		Yang et al., 2016 [15]
XC10D007B7-10	Xincheng	Pyrite	0.04	0.63		Yang et al., 2016 [15]
XC10D007B7-11	Xincheng	Pyrite	0.01	0.35		Yang et al., 2016 [15]
XC10D203B1-1	Xincheng	Pyrite	0.36	31.1		Yang et al., 2016 [15]

XC10D203B1-2	Xincheng	Pyrite	0.16	2.89		Yang et al., 2016 [15]
XC10D203B1-3	Xincheng	Pyrite	0.37	12.1		Yang et al., 2016 [15]
XD10D207B1-1	Xincheng	Pyrite	0.14	1.8		Yang et al., 2016 [15]
XD10D207B1-2	Xincheng	Pyrite	0.05	0.63		Yang et al., 2016 [15]
XD10D207B1-3	Xincheng	Pyrite	0.10	4.48		Yang et al., 2016 [15]
XC10D207B3-1	Xincheng	Pyrite	0.12	12.5		Yang et al., 2016 [15]
XC10D207B3-2	Xincheng	Pyrite	0.10	140		Yang et al., 2016 [15]
XC10D207B3-3	Xincheng	Pyrite	0.01	0.67		Yang et al., 2016 [15]
XC10D211B18-1	Xincheng	Pyrite	0.23	1.3		Yang et al., 2016 [15]
XC10D211B18-2	Xincheng	Pyrite	0.16	1.82		Yang et al., 2016 [15]
XC10D211B18-3	Xincheng	Pyrite	0.34	2.63		Yang et al., 2016 [15]
XC10D007B11-1	Xincheng	Pyrite	0.03	0.64		Yang et al., 2016 [15]
XC10D007B11-2	Xincheng	Pyrite	0.03	0.42		Yang et al., 2016 [15]
XC10D007B11-3	Xincheng	Pyrite	0.02	0.65		Yang et al., 2016 [15]
XC10D211B14-1	Xincheng	Pyrite	0.21	4.14		Yang et al., 2016 [15]
XC10D211B14-2	Xincheng	Pyrite	0.24	4.54		Yang et al., 2016 [15]
XC10D211B14-3	Xincheng	Pyrite	0.58	44.8		Yang et al., 2016 [15]
XC10D215B1-1	Xincheng	Pyrite	0.06	18.2		Yang et al., 2016 [15]
XC10D215B1-2	Xincheng	Pyrite	0.05	13.4		Yang et al., 2016 [15]
XC10D204B6-1	Xincheng	Pyrite	9.27	668		Yang et al., 2016 [15]
XC10D204B6-2	Xincheng	Pyrite	0.02	0.03		Yang et al., 2016 [15]
XC10D204B6-3	Xincheng	Pyrite	0.12	4.04		Yang et al., 2016 [15]
XC10D204B6-4	Xincheng	Pyrite	0.17	0.05		Yang et al., 2016 [15]
XC10D204B6-5	Xincheng	Pyrite	0.03	0.2		Yang et al., 2016 [15]
XC10D007B7-12	Xincheng	Pyrite	0.03	21		Yang et al., 2016 [15]
XC10D007B7-13	Xincheng	Pyrite	0.04	88.7		Yang et al., 2016 [15]
XC10D007B7-14	Xincheng	Pyrite	0.04	6.82		Yang et al., 2016 [15]
20QC-13-01	Qianchen	Pyrite	0.018	0.132	0.13	Wu et al., 2022 [16]
20QC-13-03	Qianchen	Pyrite	0.003	0.072	0.05	Wu et al., 2022 [16]
20QC-13-04	Qianchen	Pyrite	0.007	0.127	0.06	Wu et al., 2022 [16]
20QC-13-05	Qianchen	Pyrite	0.012	0.491	0.02	Wu et al., 2022 [16]
20QC-8-2-01	Qianchen	Pyrite	0.088	1.049	0.08	Wu et al., 2022 [16]
20QC-8-2-02	Qianchen	Pyrite	0.002	0.144	0.01	Wu et al., 2022 [16]
20QC-8-2-03	Qianchen	Pyrite	0.084	0.699	0.12	Wu et al., 2022 [16]
20QC-8-2-04	Qianchen	Pyrite	0.034	0.572	0.06	Wu et al., 2022 [16]
20QC-8-2-05	Qianchen	Pyrite	0.004	0.016	0.23	Wu et al., 2022 [16]
20QC-25-01	Qianchen	Pyrite	0.308	0.431	0.72	Wu et al., 2022 [16]
20QC-25-04	Qianchen	Pyrite	0.010	0.050	0.21	Wu et al., 2022 [16]

20QC-27-01	Qianchen	Pyrite	0.006	0.301	0.02	Wu et al., 2022 [16]
20QC-27-02	Qianchen	Pyrite	0.002	1.102	0.00	Wu et al., 2022 [16]
20QC-27-03	Qianchen	Pyrite	0.043	1.535	0.03	Wu et al., 2022 [16]
20QC-27-05	Qianchen	Pyrite	0.003	0.198	0.02	Wu et al., 2022 [16]
A1547-E-Py1	Zhaoxian	Pyrite	0.17	0.49	0.35	Li et al., 2021 [17]
A1547-E-Py3	Zhaoxian	Pyrite	0.14	0.57	0.24	Li et al., 2021 [17]
A1547-E-Py4	Zhaoxian	Pyrite	0.06	0.27	0.24	Li et al., 2021 [17]
A1547-E-Py01	Zhaoxian	Pyrite	0.12	0.36	0.33	Li et al., 2021 [17]
A1547-E-Py03	Zhaoxian	Pyrite	0.05	0.09	0.51	Li et al., 2021 [17]
A1547-E-Py04	Zhaoxian	Pyrite	0.02	0.24	0.10	Li et al., 2021 [17]
T10	Zhaoxian	Pyrite	0.46	5.83	0.08	Li et al., 2021 [17]
A1515B-F-Py7	Zhaoxian	Pyrite	0.04	4.39	0.01	Li et al., 2021 [17]
A1515B-F-Py8	Zhaoxian	Pyrite	0.05	1.70	0.03	Li et al., 2021 [17]
A1515B-F-Py10	Zhaoxian	Pyrite	0.28	10.25	0.03	Li et al., 2021 [17]
A1526-D-Py2	Zhaoxian	Pyrite	0.12	17.60	0.01	Li et al., 2021 [17]
A1526-D-Py4	Zhaoxian	Pyrite	0.07	3.95	0.02	Li et al., 2021 [17]
A1526-D-Py5	Zhaoxian	Pyrite	0.07	3.86	0.02	Li et al., 2021 [17]
A1507-C-Py02	Zhaoxian	Pyrite	0.03	5.22	0.01	Li et al., 2021 [17]
A1507-C-Py03	Zhaoxian	Pyrite	0.19	16.00	0.01	Li et al., 2021 [17]
A1507-C-Py05	Zhaoxian	Pyrite	0.03	5.79	0.00	Li et al., 2021 [17]
A1515B-F-Py01	Zhaoxian	Pyrite	0.03	0.21	0.16	Li et al., 2021 [17]
A1515B-F-Py06	Zhaoxian	Pyrite	0.04	3.06	0.01	Li et al., 2021 [17]
A1515B-F-Py09	Zhaoxian	Pyrite	0.14	10.87	0.01	Li et al., 2021 [17]
A1526-D-Py04	Zhaoxian	Pyrite	0.04	3.76	0.01	Li et al., 2021 [17]
A1526-D-Py05	Zhaoxian	Pyrite	0.09	2.48	0.04	Li et al., 2021 [17]
B1515-A-Py04	Zhaoxian	Pyrite	1.11	1.76	0.63	Li et al., 2021 [17]
B1515-A-Py05	Zhaoxian	Pyrite	0.61	1.07	0.57	Li et al., 2021 [17]
H1729-a@8	Zhaoxian	Pyrite	2.45	1.43	1.72	Li et al., 2021 [17]
19ZY03-01	Linglong	Pyrite	0.03	0.05	0.58	Li et al., 2021 [17]
19ZY03-02	Linglong	Pyrite	0.01	0.01	0.66	Li et al., 2021 [17]
19ZY03-03	Linglong	Pyrite	0.14	0.02	8.51	Li et al., 2021 [17]
19ZY03-07	Linglong	Pyrite	0.01	0.02	0.41	Li et al., 2021 [17]
19ZY14-04	Linglong	Pyrite	0.01	0.01	1.60	Li et al., 2021 [17]
19ZY14-05	Linglong	Pyrite	0.10	0.02	4.15	Li et al., 2021 [17]
19ZY01-01	Linglong	Pyrite	0.02	0.78	0.02	Li et al., 2021 [17]
19ZY01-03	Linglong	Pyrite	0.03	0.20	0.14	Li et al., 2021 [17]
19ZY07-01	Linglong	Pyrite	0.09	0.39	0.23	Li et al., 2021 [17]
19ZY07-02	Linglong	Pyrite	0.03	0.03	0.77	Li et al., 2021 [17]

19ZY07-03	Linglong	Pyrite	0.02	0.26	0.07	Li et al., 2021 [17]
19ZY07-04	Linglong	Pyrite	0.01	0.08	0.13	Li et al., 2021 [17]
19ZY07-06	Linglong	Pyrite	0.02	0.02	0.88	Li et al., 2021 [17]
19ZY13-02	Linglong	Pyrite	18.67	0.62	30.11	Li et al., 2021 [17]
19ZY09-04	Linglong	Pyrite	0.12	0.35	0.34	Li et al., 2021 [17]
19ZY09-05	Linglong	Pyrite	0.01	0.01	1.31	Li et al., 2021 [17]
19ZY09-07	Linglong	Pyrite	0.01	0.02	0.56	Li et al., 2021 [17]
DY011-2	Dayingezhuang	Pyrite	0.01	0.03		Lan et al., 2022 [18]
DY011-3	Dayingezhuang	Pyrite	0.04	0.13		Lan et al., 2022 [18]
DY012-1	Dayingezhuang	Pyrite	0.01	0.01		Lan et al., 2022 [18]
DY012-2	Dayingezhuang	Pyrite	0.04	0.62		Lan et al., 2022 [18]
DY012-3	Dayingezhuang	Pyrite	0.1	4.9		Lan et al., 2022 [18]
DY012-4	Dayingezhuang	Pyrite	0.13	93.9		Lan et al., 2022 [18]
DY015-1	Dayingezhuang	Pyrite	0.01	10.4		Lan et al., 2022 [18]
DY015-2	Dayingezhuang	Pyrite	0.07	8.4		Lan et al., 2022 [18]
DY016-1	Dayingezhuang	Pyrite	1.2	332		Lan et al., 2022 [18]
DY016-2	Dayingezhuang	Pyrite	0.63	227		Lan et al., 2022 [18]
DY013-4	Dayingezhuang	Pyrite	0.74	287		Lan et al., 2022 [18]
DY013-5	Dayingezhuang	Pyrite	0.32	245		Lan et al., 2022 [18]
DY017-1	Dayingezhuang	Pyrite	0.32	529		Lan et al., 2022 [18]
DY017-2	Dayingezhuang	Pyrite	0.27	456		Lan et al., 2022 [18]
DY017-3	Dayingezhuang	Pyrite	0.04	149		Lan et al., 2022 [18]
DY017-4	Dayingezhuang	Pyrite	0.22	45.2		Lan et al., 2022 [18]
02BJ01	Sizhuang	Pyrite	0.04	1.38		Liu et al., 2021 [19]
02BJ02	Sizhuang	Pyrite	0.03	0.08		Liu et al., 2021 [19]
03T02	Sizhuang	Pyrite	0.02	0.13		Liu et al., 2021 [19]
03T03	Sizhuang	Pyrite	0.05	0.05		Liu et al., 2021 [19]
06-1J201	Sizhuang	Pyrite	0.03	2.32		Liu et al., 2021 [19]
06-BJ05	Sizhuang	Pyrite	0.04	0.11		Liu et al., 2021 [19]
06-BJ06	Sizhuang	Pyrite	0.04	0.24		Liu et al., 2021 [19]
07J04	Sizhuang	Pyrite	0.02	0.07		Liu et al., 2021 [19]
08T01	Sizhuang	Pyrite	0.01	0.28		Liu et al., 2021 [19]
08T02	Sizhuang	Pyrite	0.01	0.03		Liu et al., 2021 [19]
08T03	Sizhuang	Pyrite	0.03	0.76		Liu et al., 2021 [19]
09J04	Sizhuang	Pyrite	0.07	13.7		Liu et al., 2021 [19]
09T02	Sizhuang	Pyrite	0.02	3.79		Liu et al., 2021 [19]
10AJ01	Sizhuang	Pyrite	0.35	0.60		Liu et al., 2021 [19]
10a-j09	Sizhuang	Pyrite	0.09	0.62		Liu et al., 2021 [19]

10a-j10	Sizhuang	Pyrite	0.11	1.94	Liu et al., 2021 [19]
10AJ206	Sizhuang	Pyrite	0.01	0.02	Liu et al., 2021 [19]
10AT01	Sizhuang	Pyrite	0.08	0.46	Liu et al., 2021 [19]
11J06	Sizhuang	Pyrite	0.02	0.92	Liu et al., 2021 [19]
02B-J02	Sizhuang	Pyrite	0.01	8.51	Liu et al., 2021 [19]
02T01	Sizhuang	Pyrite	0.02	2.00	Liu et al., 2021 [19]
02T02	Sizhuang	Pyrite	0.01	0.35	Liu et al., 2021 [19]
04J212	Sizhuang	Pyrite	0.02	11.8	Liu et al., 2021 [19]
06-BJ02	Sizhuang	Pyrite	0.05	0.16	Liu et al., 2021 [19]
06-BJ04	Sizhuang	Pyrite	0.05	10.3	Liu et al., 2021 [19]
L18	Sizhuang	Pyrite	0.25	5.93	Liu et al., 2021 [19]
01J01	Sizhuang	Pyrite	0.01	0.02	Liu et al., 2021 [19]
02AT01	Sizhuang	Pyrite	0.11	67.1	Liu et al., 2021 [19]
02AT02	Sizhuang	Pyrite	0.10	0.84	Liu et al., 2021 [19]
02B-J03	Sizhuang	Pyrite	0.05	23.3	Liu et al., 2021 [19]
03J01	Sizhuang	Pyrite	0.07	76.7	Liu et al., 2021 [19]
03J02	Sizhuang	Pyrite	0.02	0.50	Liu et al., 2021 [19]
04TN01	Sizhuang	Pyrite	0.02	23.3	Liu et al., 2021 [19]
04TN05	Sizhuang	Pyrite	0.01	6.45	Liu et al., 2021 [19]
10AJ201	Sizhuang	Pyrite	0.03	0.45	Liu et al., 2021 [19]
10AJ204	Sizhuang	Pyrite	0.05	0.46	Liu et al., 2021 [19]
L03	Sizhuang	Pyrite	0.04	13.3	Liu et al., 2021 [19]
L04	Sizhuang	Pyrite	0.15	48.2	Liu et al., 2021 [19]
L04	Sizhuang	Pyrite	0.06	17.1	Liu et al., 2021 [19]
L05	Sizhuang	Pyrite	0.31	5.22	Liu et al., 2021 [19]
L05	Sizhuang	Pyrite	0.17	91.2	Liu et al., 2021 [19]
L06	Sizhuang	Pyrite	0.24	5.22	Liu et al., 2021 [19]
L06	Sizhuang	Pyrite	0.03	17.0	Liu et al., 2021 [19]
L07	Sizhuang	Pyrite	0.01	0.62	Liu et al., 2021 [19]
L09	Sizhuang	Pyrite	0.06	13.2	Liu et al., 2021 [19]
L10	Sizhuang	Pyrite	0.01	7.94	Liu et al., 2021 [19]
L11	Sizhuang	Pyrite	0.03	2.14	Liu et al., 2021 [19]
L12	Sizhuang	Pyrite	0.39	1.18	Liu et al., 2021 [19]
L13	Sizhuang	Pyrite	0.08	2.03	Liu et al., 2021 [19]
L15	Sizhuang	Pyrite	0.09	0.41	Liu et al., 2021 [19]
L16	Sizhuang	Pyrite	0.05	39.1	Liu et al., 2021 [19]
L17	Sizhuang	Pyrite	0.49	0.37	Liu et al., 2021 [19]
01J03	Sizhuang	Pyrite	0.02	0.35	Liu et al., 2021 [19]

02B-J04	Sizhuang	Pyrite	0.04	0.09	Liu et al., 2021 [19]
04J205	Sizhuang	Pyrite	0.13	2.96	Liu et al., 2021 [19]
04J206	Sizhuang	Pyrite	0.19	3.05	Liu et al., 2021 [19]
04T01	Sizhuang	Pyrite	0.14	34.9	Liu et al., 2021 [19]
04T03	Sizhuang	Pyrite	0.07	31.1	Liu et al., 2021 [19]
04T04	Sizhuang	Pyrite	0.20	0.82	Liu et al., 2021 [19]
04T05	Sizhuang	Pyrite	0.31	4.90	Liu et al., 2021 [19]
04T07	Sizhuang	Pyrite	0.28	73.3	Liu et al., 2021 [19]
04T10	Sizhuang	Pyrite	0.50	36.1	Liu et al., 2021 [19]
L08	Sizhuang	Pyrite	0.01	6.56	Liu et al., 2021 [19]
L08	Sizhuang	Pyrite	141	118.2	Liu et al., 2021 [19]
L14	Sizhuang	Pyrite	0.11	51.6	Liu et al., 2021 [19]
03A1J02	Sizhuang	Pyrite	0.01	7.67	Liu et al., 2021 [19]
03A1J09	Sizhuang	Pyrite	0.61	43.5	Liu et al., 2021 [19]
03A1J11	Sizhuang	Pyrite	0.05	3.41	Liu et al., 2021 [19]
03A1J14	Sizhuang	Pyrite	0.06	10.1	Liu et al., 2021 [19]
03J03	Sizhuang	Pyrite	0.01	4.38	Liu et al., 2021 [19]
03J04	Sizhuang	Pyrite	0.01	2.89	Liu et al., 2021 [19]
03J05	Sizhuang	Pyrite	0.02	5.10	Liu et al., 2021 [19]
03J06	Sizhuang	Pyrite	0.01	4.47	Liu et al., 2021 [19]
03J07	Sizhuang	Pyrite	0.02	3.41	Liu et al., 2021 [19]
SSD-2-1	Sanshandao	Pyrite	0.02	0.10	Lin et al., 2019 [20]
SSD-2-2	Sanshandao	Pyrite	0.08	3.15	Lin et al., 2019 [20]
SSD-2-3	Sanshandao	Pyrite	0.17	2.26	Lin et al., 2019 [20]
SSD-2-4	Sanshandao	Pyrite	0.16	2.77	Lin et al., 2019 [20]
SSD-2-5	Sanshandao	Pyrite	0.10	14	Lin et al., 2019 [20]
SSD-17-1	Sanshandao	Pyrite	0.00	0.05	Lin et al., 2019 [20]
SSD-17-2	Sanshandao	Pyrite	0.12	0.07	Lin et al., 2019 [20]
SSD-2-6	Sanshandao	Pyrite	0.22	1.57	Lin et al., 2019 [20]
SSD-2-7	Sanshandao	Pyrite	0.05	0.35	Lin et al., 2019 [20]
SSD-2-8	Sanshandao	Pyrite	0.07	0.27	Lin et al., 2019 [20]
SSD-9-1	Sanshandao	Pyrite	0.15	0.74	Lin et al., 2019 [20]
SSD-9-2	Sanshandao	Pyrite	0.19	2.24	Lin et al., 2019 [20]
SSD-9-3	Sanshandao	Pyrite	0.35	11.86	Lin et al., 2019 [20]
SSD-9-4	Sanshandao	Pyrite	0.08	49.61	Lin et al., 2019 [20]
SSD-9-5	Sanshandao	Pyrite	0.26	2.79	Lin et al., 2019 [20]
SSD-9-6	Sanshandao	Pyrite	0.38	2.39	Lin et al., 2019 [20]
SSD-9-7	Sanshandao	Pyrite	0.06	48.77	Lin et al., 2019 [20]

SSD-9-8	Sanshandao	Pyrite	0.10	4.54	Lin et al., 2019 [20]
SSD-7-1	Sanshandao	Pyrite	0.38	13.64	Lin et al., 2019 [20]
SSD-7-2	Sanshandao	Pyrite	0.12	2.92	Lin et al., 2019 [20]
SSD-7-3	Sanshandao	Pyrite	0.01	4.69	Lin et al., 2019 [20]
SSD-7-4	Sanshandao	Pyrite	0.20	10.23	Lin et al., 2019 [20]
SSD-7-5	Sanshandao	Pyrite	0.09	0.52	Lin et al., 2019 [20]
SSD-7-6	Sanshandao	Pyrite	0.03	0.08	Lin et al., 2019 [20]
SSD-7-7	Sanshandao	Pyrite	0.01	0.01	Lin et al., 2019 [20]
SSD-17-3	Sanshandao	Pyrite	0.84	92.78	Lin et al., 2019 [20]
SSD-17-4	Sanshandao	Pyrite	0.13	1.37	Lin et al., 2019 [20]
SSD-17-5	Sanshandao	Pyrite	0.22	4.92	Lin et al., 2019 [20]
SSD-17-6	Sanshandao	Pyrite	0.38	37.61	Lin et al., 2019 [20]
SSD-17-7	Sanshandao	Pyrite	0.68	37.14	Lin et al., 2019 [20]
SSD-17-8	Sanshandao	Pyrite	0.87	32.08	Lin et al., 2019 [20]
SSD-17-9	Sanshandao	Pyrite	0.04	4	Lin et al., 2019 [20]
SSD-17-10	Sanshandao	Pyrite	7.80	19.68	Lin et al., 2019 [20]
SSD-17-11	Sanshandao	Pyrite	0.00	1.38	Lin et al., 2019 [20]
SSD-17-12	Sanshandao	Pyrite	3.10	120	Lin et al., 2019 [20]
SSD-17-13	Sanshandao	Pyrite	36.55	280	Lin et al., 2019 [20]

References

1. Zhang, C.; Li, Z.; Li, X.; Ye, H. Neoproterozoic mafic dyke swarms at the northern margin of the Tarim Block, NW China: Age, geochemistry, petrogenesis and tectonic implications. *J. Asian Earth Sci.* **2009**, *35*, 167–179. https://doi.org/10.1016/j.jseaes.2009.02.003.
2. Cai, Z.; He, B.; Meert, J.G.; Ma, X.; Jiao, C.; Liu, R.; Chen, X.; Yun, X. Neoproterozoic tectonic transition from subduction-related convergence to continental extension of the Tarim Block, NW China. *Precambrian Res.* **2021**, *362*, 106278. https://doi.org/10.1016/j.precamres.2021.106278.
3. Deng, J.; Liu, X.; Wang, Q.; Dilek, Y.; Liang, Y. Isotopic characterization and petrogenetic modeling of Early Cretaceous mafic diking—Lithospheric extension in the North China craton, eastern Asia. *GSA Bull.* **2017**, *129*, 1379–1407. https://doi.org/10.1130/B31609.1.
4. Wang, X.; Wang, Z.; Cheng, H.; Zong, K.; Wang, C.Y.; Ma, L.; Cai, Y.; Foley, S.; Hu, Z. Gold endowment of the metasomatized lithospheric mantle for giant gold deposits: Insights from lamprophyre dykes. *Geochim. Cosmochim. Acta* **2022**, *316*, 21–40. https://doi.org/10.1016/j.gca.2021.10.006.
5. Thompson, J.; Lang, J.; Stanley, C. *Platinum Group Elements in Alkaline Porphyry Deposits, British Colum-Bia*; Exploration and Mining in British Columbia, Mines Branch: 2001.
6. Gao, J.; Zhou, M.; Qi, L.; Chen, W.T.; Huang, X. Chalcophile elemental compositions and origin of the Tuwu porphyry Cu deposit, NW China. *Ore Geol. Rev.* **2015**, *66*, 403–421. https://doi.org/10.1016/j.oregeorev.2014.08.009.
7. Gan, T.; Huang, Z. Platinum-group element and Re-Os geochemistry of lamprophyres in the Zhenyuan gold deposit, Yunnan Province, China: Implications for petrogenesis and mantle evolution. *Lithos* **2017**, *282–283*, 228–239. https://doi.org/10.1016/j.lithos.2017.03.018.
8. Jowitt, S.M.; Keays, R.R.; Jackson, P.G.; Hoggart, C.R.; Green, A.H. Mineralogical and Geochemical Controls on the Formation of the Woods Point Dike Swarm, Victoria, Australia: Evidence from the Morning Star Dike and Implications for Sourcing of Au Within Orogenic Gold Systems. *Econ. Geol.* **2012**, *107*, 251–273. https://doi.org/10.2113/econgeo.107.2.251.

9. Choi, E.; Fiorentini, M.L.; Hughes, H.S.R.; Giuliani, A. Platinum-group element and Au geochemistry of Late Archean to Proterozoic calc-alkaline and alkaline magmas in the Yilgarn Craton, Western Australia. *Lithos* **2020**, *374–375*, 105716. https://doi.org/10.1016/j.lithos.2020.105716.
10. Zhang, G.; Xue, C.; Liu, J.; Zhao, X.; Feng, C.; Meng, B. The ore-forming process of the Sawayaerdun gold deposit, western Tianshan, Xinjiang: Contraints from the generation relationship and EMPA, LA-ICP-MS and FESEM analysis of the Pyrite and Arsenopyrite. *Geol. China* **2022**, *49*, 16–35. (In Chinese with English Abstract)
11. Tassara, S.; González-Jiménez, J.M.; Reich, M.; Schilling, M.E.; Morata, D.; Begg, G.; Saunders, E.; Griffin, W.L.O.; Reilly, S.Y.; Grégoire, M.; Barra, F.; Corgne, A. Plume-subduction interaction forms large auriferous provinces. *Nat. Commun.* **2017**,*8*, 843.
12. Deng, J.; Wang, Q.; Santosh, M.; Liu, X.; Liang, Y.; Yang, L.; Zhao, R.; Yang, L. Remobilization of metasomatized mantle lithosphere: A new model for the Jiaodong gold province, eastern China. Miner. *Deposita* **2020**, *55*, 257–274. https://doi.org/10.1007/s00126-019-00925-0.
13. Li, X., Fan, H., Zhu, R., Steele-Macinnis, M., Yang, K., Liu, C., Texture, geochemistry, and geochronology of titanite and pyrite: Fingerprint of magmatic-hydrothermal fertile fluids in the Jiaodong Au province. *American Mineralogist*. **2022**, 107(2): 206-220. https://doi.org/10.2138/am-2021-7889.
14. Li, X., Wang, Y., Li, Y., Fu, L., Zhang, M., Wu, X., Zhao, Y., Huang, X., Xu, C., Kong, F., Micro-geochemical characteristic of pyrites in the Heilangou gold deposit of penglai area and its implications for ore-forming fluid, Jiaodong gold province. Geological Bulletin of China. **2022**, 41(6): 1023-1038. doi: 10.12097/j.issn.1671-2552.2022.06.010.
15. Yang, L., Deng, J., Wang, Z., Guo, L., Li, R., Groves, D.I., Danyushevsky, L.V., Zhang, C., Zheng, X., Zhao, H., Relationships Between Gold and Pyrite at the Xincheng Gold Deposit, Jiaodong Peninsula, China: Implications for Gold Source and Deposition in a Brittle Epizonal Environment. *Economic Geology*. **2016**, 111(1): 105-126. https://doi.org/10.2113/econgeo.111.1.105.
16. Wu, J., Zeng, Q., Santosh, M., Fan, H., Bai, R., Li, X., Zhang, Z., Zhang, Y., Huang, L., Deep ore-forming fluid characteristics of the Jiaodong gold province: Evidence from the Qianchen gold deposit in the Jiaojia gold belt. *Ore Geology Reviews*. **2022**, 145: 104911. https://doi.org/10.1016/j.oregeorev.2022.104911.
17. Li, Q., Song, H., Chi, G., Zhang, G., Xu, Z., Genesis of visible gold in pyrite in the Zhaoxian gold deposit, Jiaodong gold province, China: Constraints from EBSD micro-structural and LA-ICP-MS elemental analyses. *Ore Geology Reviews*. **2021**, 139: 104591. https://doi.org/10.1016/j.oregeorev.2021.104591.
18. Lan, T., Fan, Y., Lu, J., Hao, L., Zhao, X., Sun, X., Guo, J., Hou, Y., Origin of the Dayingezhuang gold deposit in the Jiaodong district, eastern China: Insights from trace element character of pyrite and C-O-S isotope compositions. *Geochemical Exploration.* **2022**, 236: 106986. https://doi.org/10.1016/j.gexplo.2022.106986.
19. Liu, Z., Mao, X., Jedemann, A., Bayless, R.C., Deng, H., Chen, J., Xiao, K., Evolution of Pyrite Compositions at the Sizhuang Gold Deposit, Jiaodong Peninsula, Eastern China: Implications for the Genesis of Jiaodong-Type Orogenic Gold Mineralization. *Minerals.* **2021**, 11(4), 344. https://doi.org/10.3390/min11040344.
20. Lin, Z., Zhao, X., Xiong, L., In-situ trace element analysis characteristics of pyrite in Sanshandao Gold Deposit in Jiaodong Peninsula：Implications for ore genesis. *Advances in Earth Science*. **2019**, 34(4): 399-413. doi: 10.11867/j.issn.1001-8166.2019.04.0399.
21. Cheng, X.; Wu, H.; Sun, D.; Huang, W.; Chen, H.; Lin, X.; Zhu, K.; Zhang, F. The Permian mafic intrusive events in the northwestern margin of the Tarim Basin and their tectonic significance. *Acta Petrologica Sinica.* **2022**, *38*, 743–764. (In Chinese with English abstract)
22. Ding, Q.; Wu, C.; Santosh, M.; Fu, Y.; Dong, L.; Qu, X.; Gu, L. H–O, S and Pb isotope geochemistry of the Awanda gold deposit in southern Tianshan, Central Asian orogenic belt: Implications for fluid regime and metallogeny. *Ore Geol. Rev.* **2014**, *62*, 40–53. https://doi.org/10.1016/j.oregeorev.2014.02.017.