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Supplemental Material

Table S1. Zircon isotopic LA-ICP-MS analyses for the granitoid samples.

Table S2. Major (wt.%) and trace element (ppm) compositions of the granitoid samples.

Table S3. Hf isotopes of zircons of the granitoid samples.

Table S4. Summary of age data for the Late Triassic granitic rocks and metamorphic rocks in the Qiangtang block.

Table S5. Summary of Major (wt.%) and trace element (ppm) compositions for the Late Triassic granitic rocks in the Qiangtang block.

Table S4. Summary of age data for the Late Triassic granitic rocks and metamorphic rocks in the Qiangtang block.

No.	Sample	Lithology	Age (Ma)	Dating method	Location	References
Age data for granitoids from Southern Qiangtang						
1	R12T8	Granodiorite	211.0±1.8	LA-ICP-MS Zircon U-Pb	Riwanchaka	Chen et al., 2014
2	08-06T	Granodiorite	225.1±2.4	LA-ICP-MS Zircon U-Pb	Guoganjianian	Hu et al., 2010a
3	PM501t1	Granitic gneiss	209.1±2.8	LA-ICP-MS Zircon U-Pb	Wugong Mountain	Hu et al., 2010b
4	SH-04	Granodiorite	220.8±1.4	MC-ICP-MS Zircon U-Pb	Shuanghu	Li et al., 2015a
5	SH-43	Granite	212.0±1.5	MC-ICP-MS Zircon U-Pb	Shuanghu	Li et al., 2015a
6	SH-29-A	Granodiorite	222.2±1.3	MC-ICP-MS Zircon U-Pb	Shuanghu	Li et al., 2015a
7	YJ-2	Granodiorite	220.3±1.5	MC-ICP-MS Zircon U-Pb	Shuanghu	Li et al., 2015a
8	YJ-3	Granodiorite	221.2±1.5	MC-ICP-MS Zircon U-Pb	Shuanghu	Li et al., 2015a
9	BH-4	Granodiorite	212.5±1.1	MC-ICP-MS Zircon U-Pb	Rongma	Li et al., 2015a
10	BH-6	Granite	209.7±1.3	MC-ICP-MS Zircon U-Pb	Rongma	Li et al., 2015a
11	SH-29-B	Diorite enclave	221.0±1.2	MC-ICP-MS Zircon U-Pb	Shuanghu	Li et al., 2015a
12	GANG-1	Granite	214.4±4.0	LA-ICP-MS Zircon U-Pb	Gangtang Co	Li et al., 2015b
13	GANG-2	Granite	222.2±6.6	LA-ICP-MS Zircon U-Pb	Gangtang Co	Li et al., 2015b
14	16R2-2	Granite	213.8±1.3	LA-ICP-MS Zircon U-Pb	Baicuo	Li et al., 2020
15	16R2-3	Granite	210.0±2.1	LA-ICP-MS Zircon U-Pb	Baicuo	Li et al., 2020
16	16R2-4	Granite	208.1±1.4	LA-ICP-MS Zircon U-Pb	Baicuo	Li et al., 2020
17	D1160	Granodiorite	217.0±1.5	LA-ICP-MS Zircon U-Pb	Naru	Liu et al., 2015
18	D1161	Granodiorite	215.1±1.8	LA-ICP-MS Zircon U-Pb	Naru	Liu et al., 2015
19	11SGH-2	Biotite adamellite	207.8±2.9	LA-ICP-MS Zircon U-Pb	Sangehu	Liu et al., 2016
20	11SGH-9	K-Feldspar granite	211.6±3.8	LA-ICP-MS Zircon U-Pb	Sangehu	Liu et al., 2016
21	11SGH-6	Enclave	212.4±3.1	LA-ICP-MS Zircon U-Pb	Sangehu	Liu et al., 2016
22	R14T3	Granodiorite	222.0±1.0	LA-ICP-MS Zircon U-Pb	Riwanchaka	Wu et al., 2016
23	R3T4	Granodiorite	236.3±0.9	LA-ICP-MS Zircon U-Pb	Riwanchaka	Wu et al., 2019
24	R4T4	Granodiorite	230.1±1.9	LA-ICP-MS Zircon U-Pb	Riwanchaka	Wu et al., 2019
25	32TW1-2	Granodiorite	205.4±2.9	LA-ICP-MS Zircon U-Pb	Shuanghu	Xie et al., 2022
26	32TW3-1	Granodiorite	209.2±2.2	LA-ICP-MS Zircon U-Pb	Shuanghu	Xie et al., 2022
27	32TW2	Microgranular enclaves	207.1±2.2	LA-ICP-MS Zircon U-Pb	Shuanghu	Xie et al., 2022
28	32TW4	Microgranular enclaves	206.6±3.8	LA-ICP-MS Zircon U-Pb	Shuanghu	Xie et al., 2022
29	TL01	Monzonitic granite	211.0±4.0	LA-ICP-MS Zircon U-Pb	Xiangtaohu	Zhang et al., 2014
30	TL04	Monzonitic granite	213.0±2.0	LA-ICP-MS Zircon U-Pb	Xiangtaohu	Zhang et al., 2014
31	1453-1	Granodiorite porphyry	212.6±4.9	LA-ICP-MS Zircon U-Pb	Jiangai	Zhao et al., 2018

32	1460-1	Biotite granite	215.4±2.7	LA-ICP-MS Zircon U-Pb	Jiagai	Zhao et al., 2018
33	1467-1	Biotite granite	210.4±2.0	LA-ICP-MS Zircon U-Pb	Jiagai	Zhao et al., 2018
34	R13T14	Monzogranite	225.8±1.7	LA-ICP-MS Zircon U-Pb	Changliangshan	This study
35	R12T1	Granodiorite	215.0±1.2	LA-ICP-MS Zircon U-Pb	Changliangshan	This study
36	R3T14	Granodiorite	214.4±2.4	LA-ICP-MS Zircon U-Pb	Changliangshan	This study
Age data for granitoids from Northern Qiangtang						
37	T15-68-1	Granitoid	208.0±3.9	LA-ICP-MS Zircon U-Pb	Leiwuqi	Chen et al., 2018
38	T15-68-2	Granitoid	210.0±1.2	LA-ICP-MS Zircon U-Pb	Leiwuqi	Chen et al., 2018
39	T15-58-1	Granitoid	211.2±1.2	LA-ICP-MS Zircon U-Pb	Leiwuqi	Chen et al., 2018
40	T15-60-2	Granitoid	210.7±3.7	LA-ICP-MS Zircon U-Pb	Leiwuqi	Chen et al., 2018
41	T15-68-10	Granitoid	213.2±0.8	LA-ICP-MS Zircon U-Pb	Leiwuqi	Chen et al., 2018
42	T15-69-2	Granitoid	208.0±1.8	LA-ICP-MS Zircon U-Pb	Leiwuqi	Chen et al., 2018
43	T15-69-4	Granitoid	210.5±2.3	LA-ICP-MS Zircon U-Pb	Leiwuqi	Chen et al., 2018
44	T15-73-1	Granitoid	207.5±1.7	LA-ICP-MS Zircon U-Pb	Leiwuqi	Chen et al., 2018
45	D1185N	Monzogranite	231.0±1.4	LA-ICP-MS Zircon U-Pb	Xiamari	Guan et al., 2016
46	D1186N	Monzogranite	227.2±1.6	LA-ICP-MS Zircon U-Pb	Xiamari	Guan et al., 2016
47	AD1604-U1	Granite	229.6±2.3	LA-ICP-MS Zircon U-Pb	Cairi	He et al., 2022
48	15ZB174-1	Granite	217.0±2.0	SIMS Zircon U-Pb	Shuanghu	Jiang et al., 2021
49	GR-6	Granitoid	224.2±5.5	LA-ICP-MS Zircon U-Pb	Geri	Lu et al., 2017
50	GR-17	Granitoid	223.4±4.9	LA-ICP-MS Zircon U-Pb	Geri	Lu et al., 2017
51	DM-10	Granitoid	227.9±2.2	LA-ICP-MS Zircon U-Pb	Dangmujiang	Lu et al., 2017
52	TK-9	Granite-porphyry	221.3±1.2	LA-ICP-MS Zircon U-Pb	Tanggula Range	Lu et al., 2019
53	TK-11	Granite-porphyry	221.0±3.3	LA-ICP-MS Zircon U-Pb	Tanggula Range	Lu et al., 2019
54	11ST-60F	Granite	220.3±0.7	LA-ICP-MS Zircon U-Pb	Dongdashan	Peng et al., 2015
55	10TG06	Syenogranite	235.1±1.4	LA-ICP-MS Zircon U-Pb	Tanggula	Song et al., 2022
56	10TG21	Syenogranite	235.3±1.6	LA-ICP-MS Zircon U-Pb	Tanggula	Song et al., 2022
57	10TG03	Syenogranite	233.9±1.2	LA-ICP-MS Zircon U-Pb	Tanggula	Song et al., 2022
58	10TG05	Syenogranite	233.1±1.9	LA-ICP-MS Zircon U-Pb	Tanggula	Song et al., 2022
59	10TG17	Syenogranite	232.9±1.9	LA-ICP-MS Zircon U-Pb	Tanggula	Song et al., 2022
60	10TG14	Syenogranite	230.1±1.2	LA-ICP-MS Zircon U-Pb	Tanggula	Song et al., 2022
61	10TG23	Syenogranite	230.1±2.9	LA-ICP-MS Zircon U-Pb	Tanggula	Song et al., 2022
62	10TG09	Monzogranite	230.1±1.0	LA-ICP-MS Zircon U-Pb	Tanggula	Song et al., 2022
63	10TG22	Syenogranite	225.9±2.2	LA-ICP-MS Zircon U-Pb	Tanggula	Song et al., 2022
64	JR3	Biotite granite	219.1±1.7	LA-ICP-MS Zircon U-Pb	Jitang	Tao et al., 2014

65	GZ114-8	Diorite	219.0±2.0	SIMS Zircon U-Pb	Baohu	Wang et al., 2021
66	GZ114-2	Diorite	220.0±2.0	SIMS Zircon U-Pb	Baohu	Wang et al., 2021
67	GZ111-3	Diorite	222.0±2.0	SIMS Zircon U-Pb	Baohu	Wang et al., 2021
68	BH0701	Diorite	223.0±2.0	LA-ICP-MS Zircon U-Pb	Baohu	Zhai et al., 2013
Age for metamorphic rocks from the central Qiangtang terrane						
69	P02-38K	Grt-Phg schist	218.8±1.5	Phg Ar-Ar	Pianshishan	Dong et al., 2009
70	97-6-9-4a	Epidote amphibolites	207.8±1.1	Amp Ar-Ar	Shuanghu	Kapp et al., 2003
71	97-6-13-3b	Epidote amphibolites	209.5±1.0	Amp Ar-Ar	Shuanghu	Kapp et al., 2003
72	97-6-16-4a	Epidote amphibolites	212.7±1.1	Amp Ar-Ar	Shuanghu	Kapp et al., 2003
73	5-31-99-1c	Blueschist	221.4±0.3	Phg Ar-Ar	Rongma	Kapp et al., 2003
74	6-30-99-2m	Blueschist	221.8±0.1	Phg Ar-Ar	Rongma	Kapp et al., 2003
75	P22-05-02	Eclogite	219.3±1.5	Phg Ar-Ar	Guoganjianian	Li et al., 2006
76	P22-05-03	Grt-Phg schist	217.2±1.8	Phg Ar-Ar	Guoganjianian	Li et al., 2006
77		Blueschist	222.5±3.7	Crs Ar-Ar	Guoganjianian	Li, 1997
78	P22-16-TW1	Qtz-Phg schist	219.1±1.4	Phg Ar-Ar	Lanling	Liang et al., 2012
79	P22-16-TW3	Qtz-Phg schist	211.9±1.2	Phg Ar-Ar	Lanling	Liang et al., 2012
80	6-30-99-2D	Grt blueschist	223.4±4.5	Grt-Gln Lu-Hf	Rongma	Pullen et al., 2008
81	06AQ183	Gar-Mca schist	228.1±1.3	Wmca Ar-Ar	Gomoco	Pullen et al., 2011
82	06AQ47	Qtz-Mca schist	209.6±1.2	Wmca Ar-Ar	Gomoco	Pullen et al., 2011
83	06AQ182B	Eclogite-facies metagabbro	231.0±3.2	Amp Ar-Ar	Gomoco	Pullen et al., 2011
84	06AQ173	Grt blueschist	194.0±5.1	Amp Ar-Ar	Pianshishan	Pullen et al., 2011
85	S-13	Blueschist	241.7±2.0	Gln Ar-Ar	Hongjishan	Tang and Zhang, 2012
86	S-7	Blueschist	207.3±2.5	Phg Ar-Ar	Hongjishan	Tang and Zhang, 2014
87		Greenschist	230.0±1.0	Phg Ar-Ar	Northern Baqing	Wang et al., 2006
88	PM011-(5)	Phengite schist	202.6±2.7	Amp Ar-Ar	Mayer Kangri	Wang et al., 2018
89	PM011-(5)	Phengite schist	192.9±2.0	Amp Ar-Ar	Mayer Kangri	Wang et al., 2018
90	PM011-(3)	Phengite schist	196.8±2.1	Amp Ar-Ar	Mayer Kangri	Wang et al., 2018
91	PM011-(5)	Phengite schist	242.4±2.3	Amp Ar-Ar	Mayer Kangri	Wang et al., 2018
92	PM011-(3)	Phengite schist	241.2±2.3	Amp Ar-Ar	Mayer Kangri	Wang et al., 2018
93	7-19-DF1	Gar-Phg-Qtz schist	224.2±1.5	Phg Ar-Ar	Yadan	Wang et al., 2019
94	8-15-7DF1	Gar-Phg-Qtz schist	223.9±1.5	Phg Ar-Ar	Yadan	Wang et al., 2019
95	Gt0609	Grt blueschist	227.0±4.0	Gln Ar-Ar	Rongma	Zhai et al., 2009
96	P8	Blueschist	215.0±2.0	Phg Ar-Ar	Rongma	Zhai et al., 2009
97	GMC0701	Eclogite	219.5±1.7	Phg Ar-Ar	Gangmaco	Zhai et al., 2011
98	E0635	Eclogite	214.1±1.8	Phg Ar-Ar	Pianshishan	Zhai et al., 2011
99	E0636	Grt-Phg schist	223.2±1.7	Phg Ar-Ar	Pianshishan	Zhai et al., 2011
100	08-12T	Eclogite	213.9±1.2	Wmca Ar-Ar	Pianshishan	Zhang et al., 2010
101	08-11T	Garnet-mica schist	213.2±1.3	Wmca Ar-Ar	Pianshishan	Zhang et al., 2010
102	08-07T	Garnet-mica schist	242.3±1.5	Wmca Ar-Ar	Guoganjianian	Zhang et al., 2010
103	D4003N1	Blueschist	209.0±4.0	Gln Ar-Ar	Caiduochaka	Zhu et al., 2010

Abbreviations: Mca=Mica; Gar=Garnet; Wmca=white mica; Crs=crossite, Gln=glaucoophane, Grt=garnet, Phg=phengite; Qtz=Quartz; Zr=Zircon; Amp=Amphibole

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