

# Supplementary Materials: Petrogenesis and Tectonic Setting of the Madeng Dacite, SW Sanjiang Indosinian Orogen: Evidence from Zircon U-Pb-Hf Isotopes, and Whole-Rock Geochemistry and Sr-Nd Isotopes

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**Table S1.** Summary of geochronological data of the Paleo-Tethyan magmatic rocks in Deqin-Weixi-Madeng area.

Number	Sample No.	Lithology	Age (Ma)	Error	Reference
1	CX034-1	dacite	241	1	[12]
2	CX021-1	dacite	208.2	2.1	[12]
	CX024-2	andesite	211.4	1.4	
	CX025-1	andesite	227.3	1.4	
	CX025-7	andesite	238.6	2	
	CX026-8	andesite	236.9	1.8	
	CX027-2	dacite	248	1	
	CX028-1	andesite	247.1	1.4	
	CX028-2	andesite	247.5	2.1	
	CX028-11	dacite	248	2	
3	CX031-4	diorite	271.8	2.9	[16]
	YL20	granodiorite	234.1	1.2	
4	YL27	granodiorite	235.6	1.2	[8]
	BW-1/BW-6	granite	233.9	1.4	
	LiN-1/LiN-2	granite	233.1	1.4	
5	LuN-1/LiN-2	granite	231	1.6	[12]
	CX044-11	andesite	212	6	
6	JJD02-1	basalt	246.1	2	[10]
	JJD03-2	rhyolite	244.6	2.6	
	JJD03-9	rhyolite	246.7	3.1	
	LCTK01-1	rhyolite	245.6	2.4	
7	SS03	gabbro	343.5	2.7	[43]
8	SJ106	diorite	251	2	[11]
	SJ109	tonalite	253	4	
	SJ133	granodiorite	249	2	
	SJ142	granodiorite	248	2	
9	014-3	granodiorite	239	6	[17]
10	YZ01-1	rhyolite	247.7	1.7	[10]
	YZ01-12	rhyolite	248.5	2.3	
11	WD01	amphibolite	297.1	2	[44]
	WD02	tonalite	306.2	4.6	
	WD03	diabase	281.3	1.8	
	WD05	gabbro	301	2.9	
12	005-8	granite	214	6	[17]
13	DX127-1	granite	240	3	[15]
	DX127-6	granite	243.1	3	
	DX134-1	rhyolite	244.8	3.8	
	DX134-7	dacite	248.8	3.3	
	DX135-3	mylonite	246.5	3.5	
	DX135-11	mylonite	250.7	4.3	
	DX135-13	mylonite	244.8	3.1	
14	B13	diorite	297	5	[23]
15	B22	gabbro	303	4	[23]
16	DX043-1	tuff	236.9	5.8	[12]
	DX043-2	andesite	234.1	3.7	
17	19S86-1	andesite	236	4	[18]
18	QD-5	rhyolite	237.7	3.5	[12]
19	D2043-2	diabase	244.8	3.1	[15]
	D5059-11	dacite	247.4	2.3	



		D5060-3	dacite	247.4	2.8	
		D5061-4	basalt	263.2	7.6	
		D5060-7	dacite	247	2.5	
		D5061-9	dacite	250	2.7	
		D5061-10	dacite	250.1	2.4	
20		D2047-3	dacite	247	4.3	[14]
		D3052-1	rhyolite	250	4.3	
		D3053-1	rhyolite	246.7	3.5	
		D3055-5A	rhyolitic lava	244	5.2	
21		DX090-2	tuff	249.1	2.5	[13]
		DX091-2	tuff	257.9	4.1	
		DX091-3	tuff	255.7	5.3	
		DX091-5	tuff	247.7	2.7	

Table S2 Zircon U-Pb data of Madeng dacite

Spot No.	Concentration (ppm)		Th/U	ratio						Age (Ma)					
	Th	U		$^{207}\text{Pb}/^{206}\text{Pb}$		$^{207}\text{Pb}/^{235}\text{U}$		$^{206}\text{Pb}/^{238}\text{U}$		$^{207}\text{Pb}/^{206}\text{Pb}$		$^{207}\text{Pb}/^{235}\text{U}$		$^{206}\text{Pb}/^{238}\text{U}$	
				$\pm 1\sigma$		$\pm 1\sigma$		$\pm 1\sigma$		$\pm 1\sigma$		$\pm 1\sigma$		$\pm 1\sigma$	
MD20-1-2 dacite Age=243.5±0.9 Ma(MSWD=1.1,n=27)															
MD20-1-2-01	153	438	0.35	0.0497	0.0019	0.2627	0.0097	0.0385	0.0004	189	88.9	237	7.8	243	2.4
MD20-1-2-02	47	267	0.17	0.0490	0.0020	0.2591	0.0103	0.0386	0.0005	150	96.3	234	8.3	244	2.9
MD20-1-2-03	80	310	0.26	0.0506	0.0020	0.2641	0.0103	0.0380	0.0004	233	95.4	238	8.3	240	2.6
MD20-1-2-04	168	523	0.32	0.0507	0.0016	0.2686	0.0086	0.0384	0.0004	228	74.1	242	6.9	243	2.2
MD20-1-2-05	89	366	0.24	0.0504	0.0019	0.2690	0.0102	0.0387	0.0004	213	88.9	242	8.2	245	2.4
MD20-1-2-06	118	378	0.31	0.0507	0.0019	0.2689	0.0098	0.0386	0.0004	233	54.6	242	7.9	244	2.3
MD20-1-2-07	142	451	0.31	0.0510	0.0017	0.2738	0.0088	0.0389	0.0004	243	78.7	246	7.0	246	2.2
MD20-1-2-08	76	285	0.27	0.0493	0.0022	0.2667	0.0120	0.0392	0.0005	161	103.7	240	9.6	248	2.9
MD20-1-2-09	148	527	0.28	0.0486	0.0018	0.2546	0.0090	0.0381	0.0004	128	88.9	230	7.3	241	2.5
MD20-1-2-10	148	516	0.29	0.0513	0.0016	0.2994	0.0098	0.0422	0.0006	254	67.6	266	7.7	266	3.5
MD20-1-2-11	136	443	0.31	0.0489	0.0017	0.2631	0.0089	0.0390	0.0005	143	81.5	237	7.2	247	2.9
MD20-1-2-12	126	430	0.29	0.0477	0.0018	0.2540	0.0092	0.0388	0.0004	83.4	88.9	230	7.5	245	2.6
MD20-1-2-13	82	306	0.27	0.0489	0.0019	0.2547	0.0101	0.0377	0.0004	143	88.0	230	8.1	238	2.4
MD20-1-2-14	83	299	0.28	0.0503	0.0021	0.2633	0.0106	0.0379	0.0004	209	89.8	237	8.5	240	2.3
MD20-1-2-15	102	317	0.32	0.0497	0.0020	0.2653	0.0102	0.0389	0.0004	189	94.4	239	8.2	246	2.8
MD20-1-2-16	161	498	0.32	0.0494	0.0016	0.2629	0.0082	0.0386	0.0004	169	71.3	237	6.6	244	2.5
MD20-1-2-17	98	326	0.30	0.0501	0.0020	0.2678	0.0108	0.0389	0.0005	198	100.9	241	8.6	246	2.9
MD20-1-2-18	115	430	0.27	0.0470	0.0015	0.2453	0.0078	0.0378	0.0004	55.7	68.5	223	6.4	239	2.3
MD20-1-2-19	102	340	0.30	0.0492	0.0019	0.2628	0.0097	0.0388	0.0004	167	88.9	237	7.8	245	2.6
MD20-1-2-20	121	463	0.26	0.0502	0.0018	0.2633	0.0093	0.0380	0.0004	211	81.5	237	7.4	240	2.6
MD20-1-2-21	154	520	0.30	0.0490	0.0017	0.2600	0.0087	0.0383	0.0004	150	77.8	235	7.0	242	2.2
MD20-1-2-22	135	449	0.30	0.0503	0.0017	0.2658	0.0089	0.0383	0.0004	209	77.8	239	7.2	242	2.3
MD20-1-2-23	147	488	0.30	0.0510	0.0015	0.2745	0.0085	0.0389	0.0004	239	68.5	246	6.8	246	2.4



MD20-1-2-24	113	392	0.29	0.0522	0.0019	0.2769	0.0102	0.0383	0.0004	300	85.2	248	8.1	242	2.4
MD20-1-2-25	134	476	0.28	0.0522	0.0017	0.2811	0.0089	0.0390	0.0004	295	74.1	251	7.0	247	2.3
MD20-1-2-26	165	553	0.30	0.0516	0.0015	0.2733	0.0081	0.0383	0.0004	333	73.1	245	6.5	243	2.2
MD20-1-2-27	134	485	0.28	0.0546	0.0020	0.2929	0.0104	0.0388	0.0004	398	76.8	261	8.2	245	2.3
MD20-1-2-28	74	309	0.24	0.0558	0.0021	0.2988	0.0111	0.0389	0.0004	443	80.5	265	8.7	246	2.5
<b>MD20-5-2 dacite Age=241.7±1.1 Ma(MSWD=1.6,n=28)</b>															
MD20-5-2-01	122	426	0.29	0.0498	0.0017	0.2631	0.0090	0.0384	0.0004	183	79.6	237	7.3	243	2.5
MD20-5-2-02	107	341	0.31	0.0508	0.0018	0.2681	0.0093	0.0384	0.0004	232	88.0	241	7.5	243	2.4
MD20-5-2-03	94	380	0.25	0.0525	0.0019	0.2727	0.0095	0.0376	0.0004	306	81.5	245	7.6	238	2.3
MD20-5-2-04	108	379	0.28	0.0539	0.0021	0.2783	0.0105	0.0376	0.0004	369	87.0	249	8.3	238	2.3
MD20-5-2-05	74	300	0.25	0.0536	0.0023	0.2830	0.0109	0.0386	0.0004	354	100.9	253	8.6	244	2.6
MD20-5-2-06	95	338	0.28	0.0541	0.0019	0.2838	0.0103	0.0379	0.0004	376	76.8	254	8.1	240	2.4
MD20-5-2-07	105	343	0.31	0.0534	0.0023	0.2802	0.0118	0.0382	0.0005	346	93.5	251	9.4	242	2.9
MD20-5-2-08	181	557	0.33	0.0538	0.0019	0.2789	0.0095	0.0376	0.0003	365	81.5	250	7.5	238	2.1
MD20-5-2-09	77	289	0.26	0.0559	0.0023	0.2917	0.0113	0.0381	0.0005	456	92.6	260	8.8	241	2.8
MD20-5-2-10	106	371	0.29	0.0496	0.0018	0.2610	0.0096	0.0380	0.0004	176	85.2	235	7.7	241	2.3
MD20-5-2-11	123	433	0.28	0.0550	0.0019	0.2882	0.0095	0.0381	0.0004	413	77.8	257	7.5	241	2.2
MD20-5-2-12	85	309	0.27	0.0553	0.0021	0.2894	0.0109	0.0379	0.0004	433	85.2	258	8.6	240	2.4
MD20-5-2-13	363	644	0.56	0.0519	0.0015	0.2711	0.0084	0.0377	0.0004	280	68.5	244	6.7	239	2.5
MD20-5-2-14	86	373	0.23	0.0522	0.0018	0.2729	0.0091	0.0381	0.0004	295	79.6	245	7.2	241	2.4
MD20-5-2-15	109	411	0.26	0.0502	0.0018	0.2674	0.0099	0.0384	0.0004	206	79.6	241	7.9	243	2.4
MD20-5-2-16	176	526	0.33	0.0529	0.0016	0.2765	0.0081	0.0378	0.0003	328	68.5	248	6.5	239	2.2
MD20-5-2-17	170	526	0.32	0.0541	0.0017	0.2827	0.0091	0.0377	0.0003	376	76.8	253	7.2	239	2.1
MD20-5-2-18	186	948	0.20	0.0524	0.0015	0.2733	0.0078	0.0378	0.0003	302	68.5	245	6.2	239	1.8
MD20-5-2-19	150	487	0.31	0.0514	0.0016	0.2742	0.0086	0.0387	0.0004	257	69.4	246	6.9	245	2.3
MD20-5-2-20	142	513	0.28	0.0507	0.0017	0.2655	0.0088	0.0378	0.0003	233	77.8	239	7.1	239	2.0
MD20-5-2-21	135	454	0.30	0.0521	0.0017	0.2791	0.0090	0.0389	0.0004	300	77.8	250	7.2	246	2.3
MD20-5-2-22	160	538	0.30	0.0499	0.0014	0.2697	0.0074	0.0391	0.0003	187	63.0	242	5.9	247	2.1
MD20-5-2-23	164	522	0.32	0.0502	0.0014	0.2677	0.0074	0.0386	0.0004	211	66.7	241	6.0	244	2.3
MD20-5-2-24	159	510	0.31	0.0479	0.0015	0.2562	0.0079	0.0388	0.0004	100	75.9	232	6.4	245	2.3
MD20-5-2-25	142	433	0.33	0.0486	0.0017	0.2628	0.0086	0.0392	0.0004	132	76.8	237	7.0	248	2.4
MD20-5-2-26	99	341	0.29	0.0466	0.0019	0.2500	0.0103	0.0389	0.0004	31.6	96.3	227	8.4	246	2.5
MD20-5-2-27	130	492	0.27	0.0508	0.0017	0.2674	0.0084	0.0382	0.0004	232	75.9	241	6.7	242	2.2
MD20-5-2-28	182	591	0.31	0.0499	0.0015	0.2644	0.0080	0.0384	0.0004	191	68.5	238	6.5	243	2.2



**Table S3.** The result of major oxides (wt%) and trace element ( $\times 10^{-6}$ ) of Madeng dacite.

Sample	MD19-7-1	MD20-1-1	MD20-1-2	MD20-5-2	MD20-7-1	MD20-7-2	MD20-8-1
SiO <sub>2</sub>	69.65	68.55	67.80	67.08	68.29	68.26	70.51
TiO <sub>2</sub>	0.84	0.53	0.56	0.77	0.68	0.73	0.28
Al <sub>2</sub> O <sub>3</sub>	14.39	13.21	13.81	13.95	12.91	13.61	13.88
FeO <sup>T</sup>	2.16	3.87	3.97	5.40	5.23	4.84	3.61
Fe <sub>2</sub> O <sub>3</sub>	1.47	0.79	0.78	2.91	2.13	1.82	3.28
FeO	0.84	3.16	3.26	2.78	3.32	3.20	0.66
CaO	0.27	1.23	0.84	0.36	0.83	0.41	0.21
Na <sub>2</sub> O	2.02	2.28	2.21	2.58	2.11	2.02	1.99
K <sub>2</sub> O	4.95	5.18	5.84	4.39	4.96	5.33	6.67
MgO	0.62	1.17	0.93	1.56	1.69	1.76	1.19
MnO	0.01	0.05	0.05	0.04	0.05	0.03	0.01
P <sub>2</sub> O <sub>5</sub>	0.16	0.14	0.15	0.14	0.15	0.16	0.19
LOI	3.04	3.50	3.76	2.88	2.17	1.85	1.00
Total	98.35	100.13	100.33	99.77	99.66	99.54	99.94
Mg#	33.83	34.97	29.39	33.97	36.53	39.29	37.05
A/NK	1.66	1.41	1.39	1.54	1.46	1.50	1.32
A/CNK	1.57	1.14	1.20	1.44	1.25	1.38	1.28
DI	80.97	79.28	78.88	79.79	84.28	80.09	87.80
Cs	21.60	6.81	7.91	10.50	2.91	15.20	12.50
Rb	235.00	213.00	254.79	107.00	187.42	251.00	232.00
Ba	284.00	703.00	792.99	185.00	755.60	619.00	1228.00
Th	25.30	22.80	22.91	23.70	21.97	25.90	26.7.00
U	4.89	5.26	5.41	5.32	5.65	5.51	4.67
Nb	15.30	11.70	11.84	15.10	13.36	14.50	17.00
Ta	1.34	1.02	0.99	1.25	1.04	1.18	1.25
La	56.10	39.80	41.52	47.10	34.83	41.80	47.80
Ce	117.00	77.70	81.10	93.30	67.43	83.30	94.50
Pr	13.30	8.74	9.17	10.50	7.60	9.38	10.70
Nd	51.30	32.40	33.19	39.20	28.54	35.00	40.20
Sm	9.36	6.23	7.08	7.73	6.11	6.92	7.82
Eu	1.49	1.07	0.96	1.05	0.96	0.93	1.05
Gd	8.11	5.76	6.22	7.31	5.47	6.44	6.72
Tb	1.17	0.92	0.94	1.11	0.83	1.06	1.02
Dy	6.86	5.87	5.52	6.71	4.70	6.34	6.13
Ho	1.30	1.16	1.10	1.34	0.97	1.30	1.20
Er	3.89	3.25	3.24	3.82	2.90	3.74	3.60
Tm	0.55	0.49	0.48	0.57	0.43	0.55	0.52
Yb	3.78	3.05	3.14	3.75	2.84	3.50	3.26
Lu	0.53	0.45	0.45	0.55	0.44	0.53	0.50
Zr	301.00	207.00	219.02	294.00	258.95	257.00	258.00
Hf	10.00	5.76	5.77	9.30	6.82	6.91	7.18
Sr	51.60	42.90	66.67	39.40	45.41	62.60	40.90
Y	33.30	32.90	34.29	34.80	28.06	37.30	34.10
Pb	8.39	16.40	14.33	4.98	4.24	20.80	51.40
V	60.90	40.10	41.41	62.60	53.60	56.60	8.60
Co	6.19	7.26	7.73	12.00	10.07	11.30	1.02
Ni	52.10	14.50	12.70	26.50	15.77	17.10	2.87
Ga	20.10	17.20	18.46	18.40	17.32	18.70	15.70
Sc	12.20	7.67	7.17	11.80	9.70	10.60	5.13
ΣREE	274.74	186.91	194.11	224.04	164.05	200.85	224.91
LaN/YbN	10.65	9.36	9.48	9.01	8.79	8.56	10.51
δEu	0.51	0.54	0.43	0.42	0.50	0.42	0.43
LREE/HREE	8.20	7.92	7.83	7.90	9.49	7.56	8.80
Nb/Ta	12.01	11.51	12.80	12.08	11.42	12.27	13.62
Th/U	4.23	4.34	3.89	4.45	5.17	4.71	5.73

**Table S4.** Zircon Lu-Hf isotope data of Madeng dacite.

Spot No.	Age (Ma)	<sup>176</sup> Yb/ <sup>177</sup> Hf	2σ	<sup>176</sup> Lu/ <sup>177</sup> Hf	2σ	<sup>176</sup> Hf/ <sup>177</sup> Hf	2σ	( <sup>176</sup> Hf/ <sup>177</sup> Hf) <sub>i</sub>	ε <sub>Hf</sub> (0)	ε <sub>Hf</sub> (t)	T <sub>DM1</sub> (Ma)	T <sub>DM2</sub> (Ma)	f <sub>Lu/Hf</sub>
MD20-1-2, dacite, 23 spots, Age=243.5±0.9Ma(MSWD=1.1)													
MD20-1-2-01	243	0.081693	0.000830	0.002371	0.000035	0.282385	0.000014	0.282372	-13.69	-8.73	1270	1824	-0.93
MD20-1-2-02	244	0.029825	0.000404	0.000914	0.000009	0.282229	0.000011	0.282223	-19.21	-13.99	1438	2157	-0.97



MD20-1-2-03	240	0.048360	0.000410	0.001425	0.000009	0.282343	0.000010	0.282334	-15.18	-10.14	1297	1910	-0.96
MD20-1-2-04	243	0.044492	0.000141	0.001307	0.000007	0.282360	0.000010	0.282352	-14.58	-9.44	1269	1869	-0.96
MD20-1-2-05	245	0.049622	0.000271	0.001468	0.000007	0.282337	0.000010	0.282328	-15.39	-10.25	1307	1921	-0.96
MD20-1-2-06	244	0.051518	0.000262	0.001464	0.000002	0.282356	0.000010	0.282347	-14.71	-9.56	1279	1878	-0.96
MD20-1-2-07	246	0.044069	0.000231	0.001251	0.000004	0.282347	0.000010	0.282339	-15.03	-9.84	1285	1896	-0.96
MD20-1-2-08	248	0.040643	0.000330	0.001226	0.000005	0.282341	0.000012	0.282333	-15.25	-10.01	1293	1908	-0.96
MD20-1-2-09	241	0.052957	0.000304	0.001497	0.000003	0.282366	0.000011	0.282357	-14.37	-9.32	1267	1859	-0.95
MD20-1-2-11	247	0.053718	0.000321	0.001565	0.000005	0.282355	0.000010	0.282346	-14.74	-9.57	1284	1879	-0.95
MD20-1-2-12	245	0.049921	0.000316	0.001418	0.000008	0.282344	0.000011	0.282335	-15.14	-10.00	1295	1904	-0.96
MD20-1-2-13	238	0.054859	0.000278	0.001602	0.000003	0.282367	0.000010	0.282358	-14.33	-9.33	1269	1859	-0.95
MD20-1-2-14	240	0.050542	0.000221	0.001448	0.000007	0.282384	0.000010	0.282375	-13.74	-8.70	1240	1819	-0.96
MD20-1-2-18	239	0.049564	0.000241	0.001432	0.000004	0.282345	0.000011	0.282337	-15.09	-10.06	1293	1904	-0.96
MD20-1-2-19	245	0.055993	0.000454	0.001528	0.000010	0.282321	0.000011	0.282312	-15.96	-10.81	1332	1958	-0.95
MD20-1-2-21	242	0.047680	0.000159	0.001314	0.000005	0.282352	0.000012	0.282344	-14.86	-9.74	1280	1887	-0.96
MD20-1-2-22	242	0.044810	0.000350	0.001240	0.000005	0.282335	0.000011	0.282327	-15.47	-10.35	1302	1925	-0.96
MD20-1-2-23	246	0.056109	0.000310	0.001530	0.000004	0.282383	0.000012	0.282374	-13.74	-8.60	1243	1817	-0.95
MD20-1-2-24	242	0.060776	0.000225	0.001610	0.000013	0.282346	0.000012	0.282337	-15.05	-9.99	1298	1902	-0.95
MD20-1-2-25	247	0.057986	0.000451	0.001581	0.000008	0.282336	0.000011	0.282327	-15.42	-10.25	1312	1923	-0.95
MD20-1-2-26	243	0.047822	0.000264	0.001305	0.000003	0.282359	0.000010	0.282351	-14.60	-9.49	1270	1871	-0.96
MD20-1-2-27	245	0.044203	0.000362	0.001201	0.000006	0.282339	0.000011	0.282332	-15.30	-10.10	1294	1912	-0.96
MD20-1-2-28	246	0.061554	0.000604	0.001642	0.000009	0.282373	0.000010	0.282364	-14.10	-8.95	1261	1840	-0.95
MD20-5-2, dacite, 22 spots, Age=241.7±1.1Ma(MSWD=1.6)													
MD20-5-2-01	243	0.044082	0.000193	0.001327	0.000002	0.282357	0.000010	0.282349	-14.66	-9.55	1273	1875	-0.96
MD20-5-2-02	243	0.058912	0.000268	0.001798	0.000012	0.282326	0.000011	0.282316	-15.76	-10.72	1333	1948	-0.95
MD20-5-2-03	238	0.058495	0.000254	0.001745	0.000004	0.282371	0.000010	0.282362	-14.17	-9.20	1267	1850	-0.95
MD20-5-2-04	238	0.059158	0.000428	0.001764	0.000014	0.282377	0.000010	0.282367	-13.97	-9.02	1260	1838	-0.95
MD20-5-2-05	244	0.040132	0.000482	0.001212	0.000008	0.282353	0.000012	0.282345	-14.82	-9.66	1276	1884	-0.96
MD20-5-2-07	242	0.052724	0.000221	0.001612	0.000008	0.282375	0.000015	0.282365	-14.06	-9.01	1258	1839	-0.95
MD20-5-2-08	238	0.042945	0.000217	0.001286	0.000002	0.282355	0.000010	0.282347	-14.76	-9.73	1275	1883	-0.96
MD20-5-2-09	241	0.052964	0.000251	0.001603	0.000008	0.282357	0.000010	0.282347	-14.69	-9.67	1283	1880	-0.95
MD20-5-2-10	241	0.051243	0.000306	0.001447	0.000004	0.282365	0.000010	0.282356	-14.41	-9.35	1267	1862	-0.96
MD20-5-2-12	240	0.040803	0.000626	0.001190	0.000013	0.282320	0.000011	0.282313	-15.98	-10.89	1321	1959	-0.96
MD20-5-2-13	239	0.059272	0.000190	0.001669	0.000003	0.282384	0.000011	0.282375	-13.72	-8.72	1247	1821	-0.95
MD20-5-2-15	243	0.047369	0.000080	0.001359	0.000004	0.282331	0.000010	0.282323	-15.59	-10.47	1311	1934	-0.96



MD20-5-2-16	239	0.052745	0.000136	0.001458	0.000005	0.282348	0.000012	0.28234	-14.99	-9.95	1290	1898	-0.96
MD20-5-2-17	239	0.046084	0.000228	0.001281	0.000005	0.282343	0.000011	0.282336	-15.16	-10.10	1291	1908	-0.96
MD20-5-2-19	245	0.048413	0.000229	0.001389	0.000008	0.282358	0.000010	0.28235	-14.64	-9.48	1274	1873	-0.96
MD20-5-2-20	239	0.056194	0.000480	0.001579	0.000011	0.282342	0.000010	0.282333	-15.22	-10.19	1304	1915	-0.95
MD20-5-2-21	246	0.048394	0.000054	0.001325	0.000005	0.282368	0.000011	0.28236	-14.30	-9.10	1258	1850	-0.96
MD20-5-2-22	247	0.048180	0.000226	0.001380	0.000004	0.282358	0.000010	0.28235	-14.64	-9.42	1274	1872	-0.96
MD20-5-2-23	244	0.045726	0.000092	0.001302	0.000004	0.282350	0.000011	0.282342	-14.93	-9.77	1283	1891	-0.96
MD20-5-2-24	245	0.038948	0.000243	0.001133	0.000003	0.282352	0.000012	0.282344	-14.86	-9.64	1274	1884	-0.97
MD20-5-2-26	246	0.056851	0.000343	0.001566	0.000003	0.282365	0.000011	0.282356	-14.38	-9.23	1270	1858	-0.95
MD20-5-2-27	242	0.045850	0.000643	0.001307	0.000014	0.282350	0.000010	0.282342	-14.93	-9.83	1283	1892	-0.96

Table S5. Whole-rock Sr-Nd isotope data of Madeng dacite.

Sample	Lithology	Rb( $10^{-6}$ )	Sr( $10^{-6}$ )	$^{87}\text{Rb}/^{86}\text{Sr}$	$^{87}\text{Sr}/^{86}\text{Sr}$	$2\sigma$	$(^{87}\text{Sr}/^{86}\text{Sr})_i$	Sm( $10^{-6}$ )	Nd( $10^{-6}$ )	$^{147}\text{Sm}/^{144}\text{Nd}$	$^{143}\text{Nd}/^{144}\text{Nd}$	$2\sigma$	$\epsilon_{\text{Nd}}(t)$	$T_{\text{DM1}}$	$T_{\text{DM2}}$
MD19-7-1	dacite	235	51.6	13.576260	0.753399	0.000007	0.706665	9.36	51.3	0.110288	0.511956	0.000005	-10.64	1759	1881
MD20-1-2	dacite	255	66.7	11.391783	0.746274	0.000006	0.706898	7.08	33.2	0.128869	0.511952	0.000005	-11.28	2149	1933
MD20-5-2	dacite	107	39.4	8.095609	0.738721	0.000007	0.710853	7.73	39.2	0.119196	0.511942	0.000005	-11.19	1946	1925
MD20-7-1	dacite	187	45.4	12.305012	0.751525	0.000007	0.709167	6.11	28.5	0.129363	0.511966	0.000005	-11.03	2136	1911