Two appendix are included in this manuscript.

Appendix 1 is a supplemental data table including Sr and Nd isotope data of some duplicate samples, totally dissolved samples and not totally dissolved samples.

Appendix 2 is the detailed procedure of total dissolution.

Appendix1:

Table Sr and Nd isotopic compositions of duplicate samples, and a comparison of selected totally dissolved samples and incomplete dissolutions of the same samples in this study

Position	Layer/cm	$^{87}Sr/^{86}Sr$	$2\sigma(10^{-6})$	$^{143}Nd/^{144}Nd$	$2\sigma(10^{-6})$	εNd(0)	Notes
Ph05-5	4-6	0.706248	6	0.512647	4	0.2	
	4-6	0.706246	8	0.512657	5	0.4	Duplicate
Ph04	0-3	0.704642	7	0.512916	4	5.4	
	0-3	0.704633	9	0.512915	4	5.4	Duplicate
Ph19	30-32	0.705997	6	0.512365	6	-5.3	
	30-32	0.706006	9	0.512323	4	-6.0	Duplicate
Ph16	30-32	0.704614	7	0.512709	7	1.4	
	30-32	0.704610	8	0.512684	8	0.9	Duplicate
Ph02	10-12			0.512525	4	-2.2	TD
	10-12			0.512514	6	-2.4	NTD
Ph05-5	12-14	0.706444	7	0.512634	4	-0.1	TD
	12-14	0.706418	8	0.512641	4	0.1	NTD
Ph05-5	28-30			0.512531	6	-2.1	TD
	28-30			0.512544	3	-1.8	NTD
PH16	0-3	0.704853	6	0.512760	5	2.4	TD
	0-3	0.704812	7	0.512730	10	1.8	NTD

Notes: TD-Totally dissolved, NTD-Not totally dissolved

Appendix2:

The detailed procedure of total dissolution is as follows:

Approximately 50 mg of the dried, ground samples were refluxed with 4 ml aqua regia (3ml conc. HCl+1ml conc. HNO3)and 2mlHF(40%) at 140¡æon a hotplate for about 12 hours.

Afterwards the samples were completely dried at 120¡æ and the residual sample was treated with a mixture of4 ml HF (40%) and 1 ml concentrated HNO3 (65%) at 120¡æ for about 12 hours. Most of our samples were completely digested without any residual particles after this total dissolution procedure.

¡¡¡¡Several samples were not completely digested because of the refractory minerals. Each of the sample residual was further totally digested in a mixture of 2.5 ml HF(40%), 2.5 ml HNO3 (65%) and 0.5 ml HClO4 (70%) at 140¡æ for at least 12 hours. Subsequently, the concentrated acid mixture was evaporated to dryness at 180¡æand then was dissolved in 4 ml 6M HNO3for at least 12 hours at 120¡æ. The sample was evaporated to dryness again at 180¡æ, and the residual was dissolved in 4ml 6M HNO3 and evaporated to dryness at 180¡æagain. This step was repeated one more time, and then the residual was refluxed with 4ml 6M HNO3(65%)£¬we carefully added 100 ¦Ìl H2O2 (30%) to react 1 hour at room temperature, and then added 200¦Ìl H2O2 (30%) to react 1 hour at room temperature. This step was also repeated one more time. After treating with the above steps, the samples were totally digested and no more mineral grains were visible. We analyzed the Sr and Nd isotope compositions of those samples which were totally digested and not totally digested for the same sample, the results are shown in Appendix 1.