Table S1 Titanium ion-exchange chromatography from previous studies: Niederer et al., (1981), Niemeyer and Lugmair (1981), Leya et al. (2007), and Trinquier et al. (2009). U.R. stands for "unreported".

Reference	Step	Volume (mL)	Acid	Step	Volume (mL)	Acid	Step	Volume (mL)	Acid
Niederer et al. (1981)	**Column 1** (0.4-mL AG1-X8; 0.32cm diameter)								
	Load	2.5	8 M HF						
	Rinse matrix	4	8 M HF						
	Rinse Al	10	10 M HF						
	Elute Ti, Zr, Hf	2	2 M HNO_3						
Niemeyer and Lugmair (1981)	**Column 1** (AG50W-X8, 200-400 mesh, 0.5cm diameter×3cm length)			**Column 2** (AG50W-X8, 200-400 mesh, 0.6cm diameter×12cm length)					
	Load	0.2	12 M HCl	Load	0.5	1.2 M HCl			
	Rinse matrix	5	12 M HCl	Rinse matrix	6.5	1.2 M HCl			
	Elute Ti	3	8 M HCl	Elute Ti	9	1.2 M HCl			
Leya et al. (2007)	**Column 1** (AG1-X8, 200-400 mesh)			**Column 2** (AG1-X8, 200-400 mesh)					
	Load	5	4 M HF	Load	1.5	0.25 M H_2SO_4–1% H_2O_2			
	Rinse matrix	8	4 M HF	Elute Ti	8	0.25 M H_2SO_4–1% H_2O_2			
	Ti, Zr and Hf	2	6 M HCl–1 M HF						
Trinquier et al. (2009)	**Column 1× (2-3)** (AG1-X8)			**Column 2** (AG1-X8; for Mg-rich samples)			**Column 3** (TODGA; for Zr-rich samples)		
	Load	U.R.	2 M HF	Load	U.R.	Mixed HCl–H_2C_2O4–H_2O_2	Load	U.R.	3.5 M HNO_3–0.45 M H_3BO_3
	Rinse matrix	15	2 M HF	Ti, Fe, and Al	U.R.	Mixed HF–HCl–$H_2C_2O_4$–H_2O_2	Ti	U.R.	3.5 M HNO_3
	Rinse V	6	4 M HCl–0.5 M HF						
	Ti	4	6 M HCl–0.5 M HF						