Supplementary Table S1

Table S1 LA-ICP-MS chemical composition results with means and standard deviation of seven nephrite localities. The range of element concentration are listed in parenthesis.

Elements	Mean ± Standard Deviation (ppm)						
	Yutian (n=84)	Qiemo (n=100)	Sanchahe (n=40)	Baikal (n=57)	Sanwei Mountain (n=98)	Maxian Mountain (n=59)	Chuncheon (n=10)
Li	1.84 ± 1.79 (0.15-10.67)	2.25 ± 3.10 (0-18.48)	2.46±1.17 (0-5.68)	5.84 ± 3.50 (1.68-16.77)	1.73 ± 0.87 (0-5.77)	7.68 ± 3.10 (2.46-22.87)	1.38 ± 1.25 (0.31-4.57)
Be	21.3 ± 9.2 (3.6-47.2)	9.9 ± 7.7 (1.21-58.74)	0.4 ± 0.6 (0-2.73)	22.9 ± 11.9 (2.64-50.80)	1.7 ± 1.4 (0.15-9.40)	19.5 ± 9.0 (0.15-54.75)	17.4 ± 6.7 (1.22-29.31)
Na	674 ± 146 (397-1089)	827 ± 349 (567-3977)	376 ± 112 (211-726)	638 ± 125 (277-918)	974 ± 286 (544-1931)	857 ± 229 (217-1652)	277 ± 213 (168-907)
Al	3487 ± 1512 (1621-12836)	3403 ± 1478 (1856-14498)	1102 ± 492 (382-2310)	3036 ±594 (905-4435)	3508 ± 1064 (1632-8799)	2898 ± 707 (822-4869)	1760 ± 466 (1052-2673)
P	143 ± 27 (84-246)	156 ± 46 (0-299)	85 ± 74 (0-240)	130 ± 62 (0-262)	138 ± 16 (78.4-185)	72 ± 10 (45-118)	26 ± 6 (18-39)
K	1029 ± 2305 (50.7-21170)	585 ± 577 (0-3940)	215 ± 84 (68-569)	565 ± 135 (254-1107)	420 ± 153 (199-1296)	513 ± 137 (207-824)	280 ± 190 (108-661)
Sc	0.77 ± 0.38 (0-3.22)	1.81 ± 4.09 (0-31.68)	1.25 ± 0.58 (0.48-3.36)	1.68 ± 1.56 (0.70-12.79)	1.85 ± 1.84 (0-17.36)	1.52 ± 0.92 (0.56-6.55)	1.10 ± 0.34 (0.85-2.08)
Ti	46.3 ± 27.4 (6.7-132)	76.7 ± 37.7 (5.38-292.1)	64.5 ± 45.0 (4.1-187.3)	28.6 ± 22.8 (1.06-123.16)	80.0 ± 47.3 (5.32-206.28)	99.0 ± 34.1 (25.39-155.96)	53.3 ± 49.4 (9-164)
V	14.9 ± 12.4 (1.5-56.5)	2.4 ± 6.6 (0.56-65.81)	7.3 ± 5.4 (0.68-23.5)	13.3 ± 6.9 (5.33-47.36)	16.6 ± 12.5 (2.17-81.60)	20.1 ± 10.2 (3.52-61.89)	15.5 ± 4.0 (9.65-24.51)
Cr	1.14 ± 0.99 (0.00-7.46)	1.39 ± 3.31 (0-31.95)	4.55 ± 17.88 (0-115)	8.37 ± 19.45 (0-133.73)	1.90 ± 5.93 (0-50.55)	1.67 ± 2.17 (0-10.88)	6.64 ± 9.39 (1.03-33.83)
Mn	518 ± 199 (103-876)	524 ± 294 (36.3-1103.7)	111 ± 74 (26-347.5)	247 ± 139 (89.0-956.8)	274 ± 170 (62.1-1079)	379 ± 419 (49.5-3025.4)	786 ± 204 (460-1119)
Co	1.60 ± 1.64 (0.04-8.31)	2.51 ± 1.94 (0.08-8.40)	0.93 ± 0.88 (0-4.61)	0.27 ± 0.35 (0-2.51)	1.37 ± 1.75 (0.16-10.88)	1.29 ± 0.93 (0.11-4.95)	1.10 ± 1.74 (0.23-6.24)
Ni	0.83 ± 0.72 (0-3.50)	1.09 ± 0.77 (0-3.34)	2.03 ± 3.40 (0-19.49)	1.58 ± 1.07 (0-5.80)	1.46 ± 2.14 (0-14.96)	1.31 ± 1.09 (0-6.58)	1.08 ± 1.40 (0.24-5.17)
Cu	0.24 ± 0.28 (0-1.37)	0.23 ± 0.38 (0-2.08)	0.99 ± 1.72 (0-8.68)	0.20 ± 0.32 (0-1.45)	0.77 ± 3.10 (0-26.30)	1.16 ± 1.01 (0-4.58)	0.84 ± 0.53 (0.29-1.98)
Zn	43.2 ± 22.6 (4.6-94.6)	103.2 ± 49.8 (10.2-244.9)	33.4 ± 45.0 (3.6-234)	21.9 ± 19.6 (8.84-156.21)	55.3 ± 40.9 (6.93-298.4)	97.0 ± 67.2 (16.32-380.46)	63.6 ± 15.0 (42.11-98.1)
Ga	1.06 ± 0.38 (0.21-2.34)	0.90 ± 0.90 (0-5.63)	0.57 ± 0.37 (0-1.46)	1.04 ± 0.36 (0.39-1.87)	1.37 ± 0.36 (0.63-2.60)	1.83 ± 0.42 (0.29-2.65)	2.64 ± 2.33 (1.14-9.50)
Rb	9.41 ± 12.21 (0-102.7)	5.98 ± 8.28 (0-43.38)	0.53 ± 0.38 (0-1.46)	3.65 ± 2.61 (0.35-16.46)	1.17 ± 1.33 (0-8.84)	3.58 ± 3.26 (0.07-16.44)	4.07 ± 4.39 (0.62-15.38)
Sr	8.60 ± 3.89 (2.5-20.19)	13.67 ± 4.74 (3.82-23.98)	13.45 ± 8.63 (5.56-42.88)	14.23 ± 6.27 (3.52-27.71)	22.28 ± 9.21 (7.13-50.78)	7.54 ± 2.46 (2.64-16.80)	19.66 ± 5.87 (7.95-28.37)
Y	3.16 ± 1.78 (0.88-12.33)	4.15 ± 5.35 (0.35-30.86)	0.84 ± 0.61 (0-2.11)	1.57 ± 2.52 (0.22-13.01)	4.14 ± 3.22 (0.31-18.82)	5.44 ± 2.83 (0.07-20.09)	1.61 ± 2.21 (0.48-8.09)
Zr	1.27 ± 1.13 (0.14-6.91)	3.89 ± 8.24 (0.07-73.61)	2.32 ± 2.68 (0.15-11.63)	3.97 ± 20.33 (0-155.26)	1.77 ± 2.26 (0-10.48)	12.21 ± 14.69 (0-70.56)	1.18 ± 0.99 (0.31-3.49)
Nb	0.50 ± 1.00 (0.02-6.79)	0.54 ± 0.76 (0.02-5.40)	0.15 ± 0.11 (0.02-0.45)	0.20 ± 0.18 (0-1.10)	0.25 ± 0.18 (0.03-1.26)	2.54 ± 1.59 (0.07-7.99)	0.34 ± 0.42 (0.05-1.53)
Ba	4.45 ± 2.35 (0.66-16.02)	7.71 ± 6.83 (1.96-47.95)	3.50 ± 1.44 (0.22-5.98)	5.27 ± 2.94 (0.79-15.89)	3.58 ± 2.64 (0.89-21.77)	6.28 ± 2.99 (0.11-15.67)	2.22 ± 1.10 (0.98-5.16)
La	0.44 ± 0.66 (0.01-3.58)	0.82 ± 0.74 (0.02-3.02)	0.38 ± 0.26 (0.04-0.91)	0.41 ± 0.48 (0.08-3.66)	0.60 ± 0.59 (0.01-3.44)	0.68 ± 0.74 (0-5.55)	0.74 ± 0.27 (0.30-1.40)
Ce	0.91 ± 1.26 (0-7.01)	1.69 ± 1.47 (0.06-6.48)	0.75 ± 0.51 (0.05-2.00)	0.92 ± 0.70 (0.19-4.96)	1.02 ± 0.93 (0.09-5.56)	1.59 ± 1.63 (0-9.64)	1.64 ± 0.59 (1.17-3.30)
Pr	0.12 ± 0.15 (0-0.76)	0.23 ± 0.20 (0-0.85)	0.09 ± 0.07 (0-0.31)	0.11 ± 0.09 (0.02-0.51)	0.15 ± 0.14 (0.01-0.92)	0.22 ± 0.16 (0.01-1.11)	0.20 ± 0.11 (0.11-0.49)

Nd	0.56 ± 0.58 (0-3.33)	0.97 ± 0.76 (0-2.97)	0.43 ± 0.33 (0-1.34)	0.55 ± 0.50 (0-2.37)	0.72 ± 0.65 (0.06-3.99)	0.94 ± 0.57 (0-4.04)	0.77 ± 0.41 (0.49-1.95)
Sm	0.18 ± 0.19 (0-1.17)	0.27 ± 0.25 (0-1.31)	0.09 ± 0.09 (0-0.33)	0.13 ± 0.14 (0-0.63)	0.19 ± 0.17 (0.02-0.79)	0.30 ± 0.14 (0.02-0.86)	0.17 ± 0.13 (0-0.47)
Eu	0.02 ± 0.02 (0-0.12)	0.03 ± 0.03 (0-0.18)	0.02 ± 0.02 (0-0.1)	0.02 ± 0.03 (0-0.19)	0.02 ± 0.02 (0-0.09)	0.03 ± 0.02 (0-0.08)	0.04 ± 0.06 (0-0.20)
Gd	0.24 ± 0.20 (0-0.98)	0.31 ± 0.31 (0-1.72)	0.14 ± 0.17 (0-0.62)	0.18 ± 0.19 (0-0.95)	0.28 ± 0.21 (0.02-1.07)	0.41 ± 0.17 (0.03-1.02)	0.18 ± 0.14 (0.04-0.50)
Tb	0.05 ± 0.03 (0.002-0.16)	0.06 ± 0.06 (0-0.40)	0.02 ± 0.02 (0-0.08)	0.03 ± 0.04 (0-0.19)	0.05 ± 0.04 (0-0.21)	0.08 ± 0.03 (0-0.20)	0.02 ± 0.03 (0-0.10)
Dy	0.32 ± 0.19 (0.07-1.01)	0.42 ± 0.47 (0.03-2.59)	0.11 ± 0.12 (0-0.5)	0.19 ± 0.31 (0-1.75)	0.37 ± 0.30 (0.01-1.87)	0.64 ± 0.30 (0.01-2.13)	0.25 ± 0.24 (0.05-0.91)
Ho	0.07 ± 0.05 (0.002-0.28)	0.11 ± 0.14 (0-0.84)	0.02 ± 0.02 (0-0.09)	0.04 ± 0.07 (0-0.38)	0.09 ± 0.07 (0-0.38)	0.15 ± 0.08 (0-0.56)	0.05 ± 0.06 (0-0.22)
Er	0.24 ± 0.16 (0.04-1.08)	0.34 ± 0.46 (0.02-2.81)	0.08 ± 0.08 (0-0.29)	0.17 ± 0.37 (0-2.28)	0.31 ± 0.24 (0-1.19)	0.52 ± 0.29 (0.01-2.00)	0.15 ± 0.19 (0-0.70)
Tm	0.04 ± 0.04 (0-0.26)	0.05 ± 0.08 (0-0.67)	± 0.01 (0-0.06)	0.03 ± 0.07 (0-0.44)	0.05 ± 0.04 (0-0.17)	0.08 ± 0.05 (0-0.38)	0.02 ± 0.03 (0-0.11)
Yb	0.23 ± 0.26 (0-1.81)	0.37 ± 0.78 (0-5.63)	0.08 ± 0.07 (0-0.3)	0.22 ± 0.76 (0-5.49)	0.28 ± 0.25 (0-1.15)	0.58 ± 0.43 (0-3.15)	0.12 ± 0.14 (0-0.48)
Lu	0.04 ± 0.05 (0-0.35)	0.06 ± 0.15 (0-1.35)	± 0.01 (0-0.05)	0.04 ± 0.17 (0-1.26)	0.04 ± 0.04 (0-0.18)	0.08 ± 0.06 (0-0.45)	± 0.01 (0-0.05)
Hf	± 0.03 (0-0.15)	0.11 ± 0.28 (0-2.12)	0.06 ± 0.09 (0-0.42)	0.07 ± 0.30 (0-2.22)	0.06 ± 0.09 (0-0.55)	0.36 ± 0.45 (0-2.11)	0.03 ± 0.03 (0-0.09)
Ta	± 0.07 (0-0.53)	0.02 ± 0.03 (0-0.19)	0.00 ± 0.00 (0-0.02)	0.01 ± 0.03 (0-0.20)	0.02 ± 0.02 (0-0.17)	0.05 ± 0.06 (0-0.32)	0.02 ± 0.04 (0-0.14)
W	0.35 ± 0.40 (0.02-2.3)	0.63 ± 0.51 (0.02-2.93)	0.18 ± 0.16 (0.00-0.63)	0.22 ± 0.16 (0-0.68)	0.24 ± 1.03 (0-10.25)	1.04 ± 1.02 (0.23-6.36)	0.03 ± 0.03 (0-0.10)
Pb	0.90 ± 0.50 (0.26-2.93)	1.05 ± 1.75 (0.15-16.65)	0.58 ± 0.31 (0-1.58)	2.44 ± 1.06 (0.62-5.63)	1.66 ± 1.18 (0.44-8.35)	6.29 ± 12.64 (0.72-77.18)	2.02 ± 1.00 (1.19-4.42)
Th	0.08 ± 0.08 (0-0.51)	0.24 ± 0.32 (0-2.14)	0.22 ± 0.27 (0-1.05)	0.02 ± 0.05 (0-0.28)	0.13 ± 0.19 (0-1.33)	1.32 ± 1.45 (0-5.75)	0.15 ± 0.11 (0-0.43)
U	0.73 ± 0.59 (0.1-2.55)	0.60 ± 0.55 (0.03-2.38)	0.64 ± 0.24 (0.18-1.22)	0.11 ± 0.18 (0-1.22)	0.82 ± 1.06 (0.02-6.52)	0.98 ± 0.48 (0.01-2.34)	0.39 ± 0.17 (0.04-0.62)