ANALYTICAL PROCEDURES

The isotope analyses were performed on nearly pure clinopyroxene separates in order to avoid the effects of serpentinization and weathering. Typical samples weighed ~100 mg. Clinopyroxene is the major carrier of REE, Sr, Pb and possibly Hf in the anhydrous spinel peridotite mineral assemblages (e.g., Bizimis et al., 2003; Choi et al., 2007), and therefore, we treat the data for this mineral as representative of each peridotite. Clinopyroxene grains were prepared from unweathered samples using nylon sieves for sizing, a magnetic separator to eliminate grains with dark inclusions, and hand picking under a binocular microscope to select only the optically clear grains for analysis. Prior to dissolution for the isotopic analyses, the minerals were washed in warm, distilled 2.5 N HCl for 15 min., and in warm distilled 5% HF for 15 min., with an H_2O rinse after each of these steps.

Sr, Nd and Pb isotope analyses, including chemical separation and measurements on VG Sector thermal ionization mass spectrometers, were performed at the University of Michigan. Details of the analytical procedures appear in Mukasa et al. (1987, 1991). $^{87}Sr/^{86}Sr$ and $^{143}Nd/^{144}Nd$ ratios were corrected for instrumental mass fractionation by normalizing to $^{86}Sr/^{88}Sr$ = 0.1194 and $^{146}Nd/^{144}Nd$ = 0.7219, respectively. Replicate analyses of NBS-987 and La Jolla standards gave $^{87}Sr/^{86}Sr$ = 0.710255 ± 11 (N = 30, $2\sigma_m$) and $^{143}Nd/^{144}Nd$ = 0.511848 ± 19 (N = 30, $2\sigma_m$). Measured Pb isotopic ratios were corrected for instrumental mass fractionation of 0.1% per atomic mass unit by reference to replicate analyses of the standard NBS-981. Total blanks averaged 0.2 ng for Sr, 0.04 ng for Nd, and 0.04 ng for Pb.

The Hf isotope analyses were determined with the multiple-collector ICP-MS (Nu-Plasma HR) at the University of Michigan, after column separation procedures summarized by Münker et al. (2001). Lu and Hf concentrations were measured by isotope dilution with enriched ^{176}Lu and ^{178}Hf spikes. In order to monitor machine performance, the JMC-475 standard was run after every two samples obtaining a mean $^{176}Hf/^{177}Hf$ ratio of 0.282133 ± 15 (N = 4, $2\sigma_m$), and the values reported were normalized to the accepted value of 0.282160. The total procedural blank level was 20 pg for Hf.

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Table DR-1. Sr-Nd-Pb-Hf isotopic compositions for clinopyroxenes separated from Stonyford peridotite in the Coast Range ophiolite of California.

Location	Little Stony Creek	Black Diamond Ridge		
Sample No	05SFV-300	05SFV-14-2	05SFV-307	05SFV-308
Rock Type	Sp. Hz.	Sp. Lz.	Sp. Lz.	Sp. Lz.
Analysis	cpx	cpx	cpx	cpx
[Rb] ppm	0.011	0.017	n.d.	n.d.
[Sr] ppm	0.60	5.91	4.94	2.95
$^{87}Rb/^{86}Sr$	0.0537	0.0085	-	-
$^{87}Sr/^{86}Sr \pm 2\sigma$	0.703530 ± 26	0.703851 ± 11	0.703761 ± 20	0.702496 ± 19
$(^{87}Sr/^{86}Sr)_{t=164Ma}$	0.703405	0.703831	-	-
[Sm] ppm	b.d.	0.89	0.06	0.97
[Nd] ppm	0.10	1.15	0.40	2.06
$^{147}Sm/^{144}Nd$	-	0.4093	0.0814	0.2494
$^{143}Nd/^{144}Nd \pm 2\sigma$	n.d.	0.513373 ± 20	0.512870 ± 60	0.513336 ± 18
duplicate	-	-	-	0.513318 ± 21
$(^{143}Nd/^{144}Nd)_{t=164Ma}$	-	0.512934	0.512783	0.513068
$(\varepsilon Nd)_{t=0}$	-	14.3	4.5	13.6
$(\varepsilon Nd)_{t=164Ma}$	-	9.9	6.9	12.5
$T_{DM}(Ma)^{a}$	-	201	285	915
[U] ppm	n.d.	0.006	n.d.	0.007
[Pb] ppm	0.32	0.74	0.53	0.65
$^{238}U/^{204}Pb$	-	0.4421	-	0.6719
$^{206}Pb/^{204}Pb$	18.60 (11)	18.50 (11)	n.d.	18.77 (16)
$^{207}Pb/^{204}Pb$	15.71 (09)	15.59 (09)	n.d.	15.58 (12)
$^{208}Pb/^{204}Pb$	38.74 (22)	38.28 (24)	n.d.	38.08 (32)
[Lu] ppm	0.05	0.22	0.09	0.23
[Hf] ppm	b.d.	0.40	0.05	0.45
$^{176}Lu/^{177}Hf$	-	0.0783	0.2292	0.0722
$^{176}Hf/^{177}Hf \pm 2\sigma$	n.d.	0.283591 ± 150	n.d.	0.283430 ± 55
$(^{176}Hf/^{177}Hf)_{t=164Ma}$	-	0.283351	-	0.283209
$(\varepsilon Hf)_{t=0}$	-	29.0	-	23.3
$(\varepsilon Hf)_{t=164Ma}$	-	24.1	-	19.1

[a] Nd model ages calculated with assumed depleted mantle evolution parameters of $^{147}Sm/^{144}Nd = 0.2124$, $^{143}Nd/^{144}Nd = 0.513114$.

ε_{Hf} is calculated with $^{176}Hf/^{177}Hf = 0.282772$ for present-day chondritic Earth.

The concentrations of Rb, Sr, Sm, Nd, U, Pb, Lu and Hf were determined by the isotope dilution technique.

Numbers in parentheses are 2σ uncertainties in terms of the least unit cited.

Abbreviations: cpx = clinopyroxene, Sp.Lz. = spinel lherzolite, Sp.Hz. = spinel harzburgite.

b.d. = below detection limit; n.d. = not determined