

## **Trace elements and REEs mineral chemistry of some alkali basalt-hosted mantle xenoliths, Jeju island, South Korea**

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Jeju island is known as a volcanic island formed by multi-stage intraplate volcanisms, which would be influenced by distal subduction tectonics. Here we tried to reveal the trace elements and REEs characteristics of olivine and two pyroxenes of xenoliths and their hosting alkali basalts from multi-stage volcanic activities, Jeju island, south Korea, to define the source of volcanism, and to interpret the changes in characteristics of multi-stage volcanic activities. Olivine doesn't show any distinct difference in trace elements and REEs between mantle xenoliths and their hosting alkali basalts except remarkable Ti-increase in alkali basalts. The REE patterns are typically LREE-depleted with negative Ce-anomaly both in mantle xenoliths and the alkali basalts. On the other hand clinopyroxenes show the distinct increase of K, Rb, Ba, Nb, P, Sr, and Ti, and the decrease of Ni and Cr. The clinopyroxenes in mantle xenoliths can be classified into LREE-depleted and enriched types, whereas those of the hosting alkali basalts show the typical LREE-enrichment patterns, possibly indicating the difference in source materials, the degree of partial melting, and the depth forming the mantle-derived xenolith-bearing alkali basalts.