

## **Sr, Nd and Pb isotopic compositions of the Ulleungdo and Dokdo Islands, East Sea**

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We present geochemical and Sr, Nd and Pb isotopic compositions of the Cenozoic volcanic rocks from the Ulleungdo and Dokdo Islands of the East Sea. They show distinct alkali affinities and wide range of compositional variation from basalts to trachytic basalt, basaltic trachyandesite, trachyandesite, and finally to trachyte on total alkali-silica diagram. They display characteristics of Ocean Island Basalts (OIB)-like trace element compositions without any noticeable Nb depletion, excluding significant influence of materials subducted along the nearby Japanese arc. The Sr, Nd and Pb isotopic compositions of the Ulleungdo and Dokdo Islands display highly enriched signatures ( $^{87}\text{Sr}/^{86}\text{Sr} = 0.704430$  to  $0.707750$ ,  $^{143}\text{Nd}/^{144}\text{Nd} = 0.512462$  to  $0.512589$ , and  $^{206}\text{Pb}/^{204}\text{Pb} = 17.860$  to  $18.210$ ) similar to other Cenozoic basalts widely distributed over the east Asia. Such enriched mantle signatures invoke long-time isolation of their sources from the convecting mantle in an order of a few billion years. However, multiple almost simultaneous occurrences of the Cenozoic basaltic rocks over vast area of the eastern Eurasian continental margin seem to be hardly related with narrow mantle plume. Meanwhile, many workers suggested that tens of kilometers thick lithospheric mantle was delaminated over the region probably during the Permo-Triassic continental collision event. We suggest that such previously delaminated lithospheric mantle materials may still stagnant under the region and served as widely scattered sources of the enriched Cenozoic volcanic rocks of the region.