

## Magma genesis and temporal variations of Tertiary and Quaternary volcanics from the mountainous of the northern Kofu Basin

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Philippine Sea plate and Pacific plate are subducting to North American Plate at Kanto and Chubu area of Japan. It has been pointed out that the double subduction of Philippine Sea and Pacific plate affected to the chemical characteristics of volcanic rocks from this area. However, the effect of the double subduction to the magma genesis is still controversial. In the mountainous of the northern Kofu Basin is situated in the area of double subduction, at present, and in suite volcanic activity from Tertiary to Quaternary are observed. Furthermore, it is considered that Philippine Sea plate was not subducted beneath this area at Miocene. Therefore, it is expected that effect of double subduction to the volcanic rocks can be discussed with the temporal variations of geochemical characteristics.

Major element, trace element, and Sr-Nd-Pb isotopic compositions of Tertiary to Quaternary volcanics from the mountainous of the northern Kofu Basin were analyzed. The samples were collected from the lavas and dykes of the Taragatoge (Miocene), Mizugamori (Pliocene), Kurofuji and Kayagateke (Pleistocene) volcanoes. In the silica-alkali diagram, most of data are plotted on the field of high alumina basalt rock series. The range of SiO<sub>2</sub> is 52.5 to 62.8 wt%, and that of Mg# is 0.38 to 0.49. Both of the SiO<sub>2</sub> and Mg# of the Tertiary volcanics are lower than those of the Quaternary volcanics. The patterns of trace elements show typical characteristics of island arc magma such as enrichment of LILE and depletion of HFSE. It is observed that the Sr/Y (less than 28) and La/Yb (less than 5) ratios of Tertiary volcanics are lower compared with those of Quaternary volcanics (Sr/Y; more than 32, La/Yb; more than 8). It can be pointed out that the most felsic and youngest volcanic rocks in this study are most depleted in Mg and trace element. This tendency is also observed from the Sr-Nd-Pb isotopic compositions. These characteristics of major element, trace element and isotopic compositions are similar to those of adakite, which is thought to be generated by partial melting of subducting slab. It is possible to consider that the usual island arc magmas were generated with single subduction of Pacific plate at Miocene, and slab melting of Philippine sea plate was started with double subduction of Philippines and Pacific plate at Quaternary.