

Sr, Nd and Pb Isotopic compositions of Quaternary volcanics from Hime-Shima volcanic group

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Hime-Shima is located in about 4 km north offshore of Kunisaki peninsula, Kyushu, Japan. On this island, seven Quaternary monogenic volcanoes form the Hime-Shima volcano group. The volcano group is consisted with Hime-Shima volcanic rocks, which are hornblende – dacite, biotite bearing hornblende – rhyolite and garnet-rhyolite. The volcano group is forming the volcanic front of middle to north Kyushu together with Futago-Yama, Yufu-Tsurumi, Kujyu and Aso volcanoes in the southern extend (Itho, 1990, Itoh et al., 1997). From the chemical compositions of Hime-Shima volcanic rocks reported by Itoh (1990), it is observed that Nb/Zr ratios (0.06 – 0.6) are high compared to general island arc magma (0.03). In the Y – Sr/Y diagram, the Hime-Shima volcanic rocks are plotted in the field of adakite, which are considered to be generated by partial melt of subducting oceanic crust. These chemical characteristics cannot be explained by the general model that the origin of island arc magma is MORB-type mantle wedge and fluid derived from subducting slab. On the other hand, contribution of the mantle plume is emphasized on the bases of the temporal and regional chemical variations of volcanics from middle Kyushu (Nakada and Kamata, 1991). Furthermore, Shibata (2004) suggested the involvement of the crustal materials from the along arc variations of trace and isotope compositions. According to these observations, partial melt of subduction slab, mantle plume and crustal materials have to be taken account for the genesis of Hime-Shima volcanic rocks. Therefore, we analyzed Sr, Nd and Pb isotopic compositions of Hime-Shima volcanic rocks, and report in this presentation.