

Phenocryst mineralogy of adakitic rocks from Bishamon-dake volcano, central Japan

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EPMA study was carried out on phenocrysts of rocks from Bishamon-dake, the Ryohaku Mountains. Cores of ortho- and clino-pyroxenes show bimodal frequency distributions in terms of $Mg/(Mg+Fe)$, and the maximum ratios reach up to 0.84 and 0.88, respectively. Olivine phenocrysts have cores with compositions similar to mantle olivine and margins in equilibrium with the Mg-rich pyroxenes. The Mg-rich pyroxenes occur more frequently in rocks with higher Sr/Y, thereby suggesting that a mantle-derived magma played a role in the genesis of the adakitic rocks. The Bishamon-dake adakitic magma was probably formed by mixing of the mantle-derived magma and a lower crustal melt, taking into account that the samples are dacitic.