Zoned structure of initial Sr isotopic ratios in the Sori granodioritic body, Ashio Mountains

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The Sori body indicating biotite K-Ar and Ar-Ar ages of 86 to 93 Ma consists of homogeneous biotite granodiorite. Initial Sr isotopic ratios calculated using 98 Ma for the body range from 0.7063 to 0.7074. The body is divided into three facies (central, transitional and marginal) based on initial ratios. The transitional facies of the body suggests the isochron ages of 98+/-11 Ma. The marginal facies has slightly lower potassium feldspar contents and higher quartz contents than those of the central facies, and the transitional facies also shows slightly lower potassium contents, and higher plagioclase contents than those of the central facies. Standard deviations of SiO2, TiO2, Al2O3, Na2O, Nb, Sr, and Y vary from marginal to central facies in descending order, suggesting that the marginal facies has widely range of chemical compositions among the Sori body. However, remarkable relation between initial Sr isotopic ratios and chemical compositions is not recognized. The Sori and other plutonic bodies have zoned structure of the initial Sr isotopic ratios. These ratios increase from central to marginal facies of the bodies, which may be caused by influence from the basement rocks.