

Petrogenesis of the Ao granite in the Ryoke belt, southwestern Japan.

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Granitic plutons of the Ryoke belt in the eastern part of Kinki area have been studied mainly by field research and petrography, however, geochemical research of these plutons has not been done enough. Among these plutons, the Ao granite is one of the large plutons and it extends 34 km from east to west and 10 km from north to south at the border between Nara and Mie prefectures. In this study, we have analyzed whole-rock chemical compositions of the Ao granite and discuss the petrogenesis of the pluton. The Ao granite is fine-grained biotite granite containing muscovite, and medium-grained biotite granodiorite containing muscovite distributes some part of the pluton. 15 samples were analyzed for major and minor chemical compositions by X-ray fluorescence spectrometer. SiO₂ content of the Ao granite range from 65.6 wt.% to 74.9 wt.%. It shows intermediate composition between I-type and S-type in the ASI (alumina saturation index). SiO₂ distribution within the pluton shows reverse zoning. Whole-rock geochemical characteristics of the Ao granite shows that the parental magma of the granite might have chemical relationships with surrounding migmatites of the Ryoke metamorphic belt.

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