

Internal structure of Cretaceous Hobenzan granitic complex, SW Japan

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Internal structure of the Cretaceous Hobenzan granitic complex was examined based on modal and chemical compositions and Sr, Nd isotope ratios. The complex is composed of tonalite and a continuous differentiation series of granodiorite, hornblende biotite granite and biotite granite. The complex is a solidified magma chamber displaying vertical and horizontal zonation. Isotope data show the higher SiO₂ rocks to be higher in radiogenic Sr than lower SiO₂ rocks, which is consistent with a simple AFC-scenario of increasing sediment assimilation with higher degrees of differentiation. In this zoned pluton, SiO₂ content and initial Sr isotopic ratios of hornblende biotite granite increase gradually from lower to upper parts, showing a zoned magma chamber. In this magma chamber, high SiO₂ magma is stored in the upper part of the chamber where crystallization and crustal contamination are most extensive.