

U-Pb zircon dating of the Late Cretaceous volcanic rocks from the Ikuno and Mitsuishi mines area, southwest Japan

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Numerous hydrothermal ore deposits occurred in Late Cretaceous to Paleogene igneous rocks are distributed in the Inner Zone of southwest Japan. The Ikuno mine in north-central Hyogo Prefecture is hydrothermal polymetallic ore deposit. This mine was produced by replacement of the Late Cretaceous dacite to rhyolite tuff and lapilli tuff of the medium to lower Ikuno Formation and dikes by high temperature fluids probably generated around granitic rocks. The Mitsuishi mine in southeastern Okayama Prefecture is hydrothermal pyrophyllite and sericite deposit. This mine was produced by replacement of the Late Cretaceous rhyolite welded tuff and lapilli tuff of the lower Wake Formation by high temperature fluids.

U-Pb zircon dating using LA-ICP-MS was carried out for 2 pyroclastic flow deposit samples from the Late Cretaceous volcanic rocks in the Ikuno and Mitsuishi mine area, southwest Japan. The Ikuno and Mitsuishi mines are determined to be 78.9 ± 0.9 Ma and 82.4 ± 0.6 Ma, respectively.

Keywords: U-Pb age, Ikuno mine, polymetallic vein, Mitsuishi mine, pyrophyllite and sericite clay deposit, Late Cretaceous