

U-Pb zircon geochronology and geochemistry of Utsubo granitic pluton in Hida Belt

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Geochronological and geochemical information is one of the essential consideration of the magmatic processes. Especially, plutonic complex with compositional zonation produced by a single magma intrusion provides good opportunity to understand detailed timescale of magmatic evolution. In this study, we discuss timescale of geochemical evolution in the Utsubo granitic pluton using highly precise U-Pb zircon dating and trace element analyses.

The Utsubo granitic pluton is situated in Hida belt, which is the northernmost geotectonic unit in the Inner Zone of Southwest Japan Arc. The granitic rocks in the Hida belt are Early Triassic to Early Jurassic, and are traditionally classified into Funatsu type and Simonomoto type. Recently, the calc-alkaline plutons in the Hida belt are divided into two types based on petrology and isotopic composition of Sr and Nd: Type-1 indicates a limited variation in initial Sr and Nd isotopic value and Type-2 indicates a wider range of isotopic value (Arakawa and Shinmura, 1995). The Utsubo granitic pluton, emplaced in the Hida gneiss, belongs to Type-1 pluton and shows a normal laterally compositional zoning, which has tonalite, granodiorite, pink coarse-grained granite, and fine-grained granite from its margin to center (Kano, 1990). Zircon grains collected from tonalite, granodiorite and coarse-grained granite were yielded ca. 192 Ma, 190 Ma and 188 Ma, respectively. The geochronological results indicate that time interval from tonalite to coarse-grained granite is about 4 Ma. In addition, geochemical data will be presented.

Keywords: zircon, U-Pb dating