Crystallization history and petrogenesisi of the Hikami granitic rocks, south Kitakami Mauntains, Japan

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Hikami granitic complex are divided into next ten rock types; hornblend-bearing granodiorite-tonalite (A-1, A-2, A-3 and A-4), hornblend-free granodiorite-tonalite (B, C, and D), and granodiorite associated with the Tsubnosawa metamorphic rocks (E, F and G). Zircon U-Pb ages were determined with laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS) for each rock type, and solidification age of the Hikami granitic rocks are Ordvician age of around 450 Ma. Petrogenesis of felsic rocks B and C in the Hikami granitic complex can be explained by the fractional crystallization model from the common parental magma of rock type A-2. Difference between the trends of A-2 to B and C can be explained by the slightly different conditions of fractional crystallization. Source material of the Ordovician granites including Hikami granitic rocks is considered to be a basaltic to andesitic material in lower continental crust, which has Sr-Nd isotopic composition more depleted compared with the Tsubonosawa metamorphic rocks and more enriched conpared with the amphibolites in teh Kurosegawa belt (Osanai et al., 2000).

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