Petrogenesis of plutonic rocks in the Mineoka-Setogawa Belts: Toward understanding of deep crustal rocks in the IBM Arc

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The Mineoka-Setogawa Belts are Paleogene accretionary complexes distributed around the Izu Peninsula. These belts contain the various sizes of ophiolitic fragments of serpentinized mantle peridotites, plutonic rocks and volcanic rocks. We performed the zircon U-Pb dating for the gabbros, diorites and tonalites from the Mineoka-Setogawa Belts, and obtained approximately 35 Ma that is coeval with the Eocene to Oligocene arc magmatism in the IBM Arc.

The major-element chemistry of the plutonic rocks from the Mineoka-Setogawa Belts shows linear trends in several elements against SiO_2 content. The REE patterns of the gabbros and the diorites and tonalites are similar to those of tholeiitic and calc-alkaline volcanics in the Eocene to Oligocene IBM Arc, respectively. The chemistry of the tonalites are also similar to the crust-origin rhyolites in the IBM Arc [1]. The plagioclase An content in the diorites indicates that the diorites were formed by the mixing between mafic and felsic magmas. Tatsumi and Suzuki [2] proposed that andesitic plutonic rocks in the middle crust in the IBM Arc were produced by the mixing of tholeiitic basaltic magma with the crust-origin rhyolitic magma. The petrological characteristics of the Mineoka-Setogawa plutonic rocks are highly consistent with the current petrogenetic model for the deep IBM crust.

[1] Tamura et al. (2009) *J. Petrol.*, **50**, 685-723. [2] Tatsumi and Suzuki (2009) *J. Petrol.*, **50**, 1575-1603.