

## Migmatite in contact metamorphic aureoles of Tokuwa granodiorite, Central Japan

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Miocene Tokuwa granodiorite, which is exposed in a northern part of Izu arc-collision zone, intruded into Cretaceous to Paleogene sedimentary rocks (Kobotoke group) and resulted in contact metamorphism of the country rocks. The metasedimentary country rocks (black schist) were metamorphosed to cordierite-biotite hornfels around the intrusive body, and in the vicinity of the intrusion (about 30m from the contact) the country rocks show the migmatitic textures (metatexite to diatexite). The migmatite have leucosomes consisting of euhedral cordierite and chemically zoned plagioclase. The petrographic and textural features of the contact aureole collectively suggest that the leucosomes were formed by partial melting of sedimentary country rocks.

Geochemical and Sr-isotopic data suggest that the contamination of metasedimentary country rocks into the host granodioritic magma is limited within a narrow contact area (~10m from the contact) where the cordierite-bearing S-type granodiorite was formed from the host granodioritic magma by mixing processes with country sedimentary rocks.

The migmatite mainly consists of quartz + plagioclase + biotite + cordierite +- K-feldspar +- muscovite. Although its peraluminous nature, the migmatite is free from  $Al_2SiO_5$  mineral. Based on the phase stability relationships in the pelitic composition (Pattison & Tracy, 1991), we estimated the maximum P-T condition for the migmatite formation at about 3.6kb and 660 degree Celsius.