

Petrology of adakitic dike rocks preceding Early Cretaceous magmatism in the Kitakami Mountains, Japan

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Dike rocks preceding the Early Cretaceous plutonic activity in the Kitakami Mountains, northeast Japan, are classified into seven rock types. Among them, adakitic dike rocks (high-Sr andesite and garnet rhyolite) are petrologically investigated. The high-Sr andesites show similar petrochemical characteristics to those of adakite except higher Cr, Ni, and Mg contents. Petrochemical study indicates that the high-Sr andesite magma can be resulted from interaction of slab derived adakitic melt with overlying wedge mantle. The magmas of adakitic dike rocks are considered to have derived by direct partial melting of subducted oceanic crust with or without various degrees of interaction with mantle peridotite.