

Early Cretaceous magmatism and role of ridge subduction in the Kitakami Mountains, Japan

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Early Cretaceous igneous rocks in the Kitakami Mountains consist mainly of plutonic rocks with minor amounts of volcanic rocks and dike rocks. Petrochemical evidence indicates that the adakitic granites can be derived by direct partial melting of subducted oceanic crust leaving eclogitic restite. Petrochemistry of the Lower Cretaceous volcanic rocks can be explained by the hypothesis that slab melt or OIB melt has affected to the source mantle. Petrochemical investigation indicates that some dike rock magma can be resulted from interaction of slab derived melt with overlying wedge mantle. Concludingly, ridge subduction played a major role on the Lower Cretaceous igneous activity in the Northeast Japan.