# Near-trench alkaline basaltic magmatism in Miocene SW Japan

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Middle Miocene short-lived near-trench magmatism took place in SW Japan Arc, up to 800 km along arc and 150 km across arc directions, respectively. Origin of the magmatism is usually discussed in relation to the subduction of young hence hot Shikoku Basin of the PhilippineSea plate, immediately after the opening of the Japan Sea and clockwise rotation of SW Japan. The forearc igneous rocks were mainly composed of S-type or I-type signature felsic volcano-plutonic complexes and mafic to felsic arc volcanic rocks including high-Mg andesite. Tholeiitic or alkaline basaltic igneous complexes with or without felsic intrusive rocks were intruded in the closest region to the trench. These basaltic magmas were considered to be derived from on- or off-ridge volcanism of the subducting Shikoku Basin at the deceasing stage of the spreading [1]. Results of $^{40}Ar/^{39}Ar$ and zircon U-Pb dating of near-trench alkaline basaltic rocks from three localities; Tanegashima alkali dolerite dikes, Ashizurimisaki igneous complex composed of alkali gabbro and dolerite dikes with A-type granitic rocks, and Shingu alkali basalt dikes, revealed that the alkaline basaltic magmatism took place ca. 12-15 Ma, clearly after the rotation of SW Japan arc and the initiation of subduction of Shikoku Basin. These alkaline basaltic rocks have OIB-like trace element signatures, and more enriched Sr-Nd isotopic composition than off-ridge alkaline rocks of the Shikoku Basin [2]. Pb isotopic composition of Tanagashima sample is close to those of terrigenous sediment, and those of Ashizurimisaki samples suggests conribution of enriched mantle component (EM-1). Contribution of EM-1 component to magma source is also suggested for Kinan Seamount Chain (KSC) on the Shikoku Basin formed in 15-7 Ma [3]. Mutual source mantle material beneath Shikoku Basin may contributed to these magmatisms.

[1] Kimura et al. (2005) *GSA Bulletin*, **117**, 969-986. [2] Hickey-Vargus (1991) *EPSL*, **107**, 290-304. [3] Ishizuka et al. (2009) *Chem. Geol.*, **266**, 274-296.

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