Rifting volcanism in the northern part of the Kyushu-Palau Ridge associated with spreading of the Shikoku Basin

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Volcanic rocks from the northern part of the Kyushu-Palau Ridge during the KT94-10 and KT98-19 cruises are mainly clinopyroxene basalt. Many rocks are classified into tholeiites on the basis of bulk composition, but some rocks have alkaline series composition. These rocks are characterized by two to five times concentration of incompatible elements, LILE and HFSE. It is assumed that these volcanic rocks were produced from fertile mantle for MORB-normalized, chondrite-normalized patterns. Radiometric ages of these rocks are near the age of the beginning of the spreading activity of the Shikoku basin. Therefore, these volcanics were produced by rifting activity associated with spreading of the Shikoku Basin, and covered the paleo-Izu-Ogasawara arc terrane before spreading back-arc basin.