

Rb-Sr and Sm-Nd isotopic study of Cretaceous to early Tertiary granitic rocks in the Kyeongsang basin, Korea

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Rb-Sr whole rock isochron ages, Sr and Nd isotopic compositions have been determined for Cretaceous to early Tertiary granitic rocks in the Kyeongsang basin, Korea. In the five plutons, Rb-Sr whole rock isochron ages and isotopic initial ratios were determined as follows:

Granitic pluton	Rb-Sr whole rock age	Initial Sr ratio
Palgongsan granite	101.9 ± 12.4 Ma	0.70603 ± 0.00029
Eonyang granite	75.7 ± 5.9 Ma	0.70493 ± 0.00033
Kyeongju granodiorite	86.0 ± 13.0 Ma	0.70475 ± 0.00011
Ulsan granitic complex	70.9 ± 6.1 Ma	0.70492 ± 0.00036
Ulsan porphyritic granite	52.9 ± 4.3 Ma	0.70492 ± 0.00057

Palgongsan granite has the highest initial Sr ratio and the lowest Nd isotopic ratios (ϵ_{Nd} : -4.53 - -7.35) among the studied granitic rocks. Sr and Nd isotopic ratios of Palgongsan granite are well correlated with those of the Transitional Zone, Southwest Japan. This means that Palgongsan granite magma have been more evolved probably due to much contribution of crustal materials.

The other granitic rocks have the same initial Sr ratios. Their Nd isotopic ratios concentrate in a very narrow range (ϵ_{Nd} : +1.23 - -0.86). These Sr and Nd isotopic ratios are correlated with those of the North Zone, Southwest Japan. This suggests that the southern part of Kyeongsang basin and the North Zone of Southwest Japan were the same magmatic province till early Tertiary.